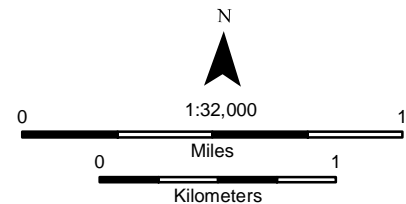


Legend

- | | | |
|-----------------------------|---------------------|-----------------------|
| Selected land | Existing power line | Land Ownership |
| Existing mining disturbance | Pyrite pipeline | BLM |
| MMPO areas/Alternative M2 | Tailings pipeline | Private |
| NPDES outfall | Water pipeline | State |
| | | Forest Service |

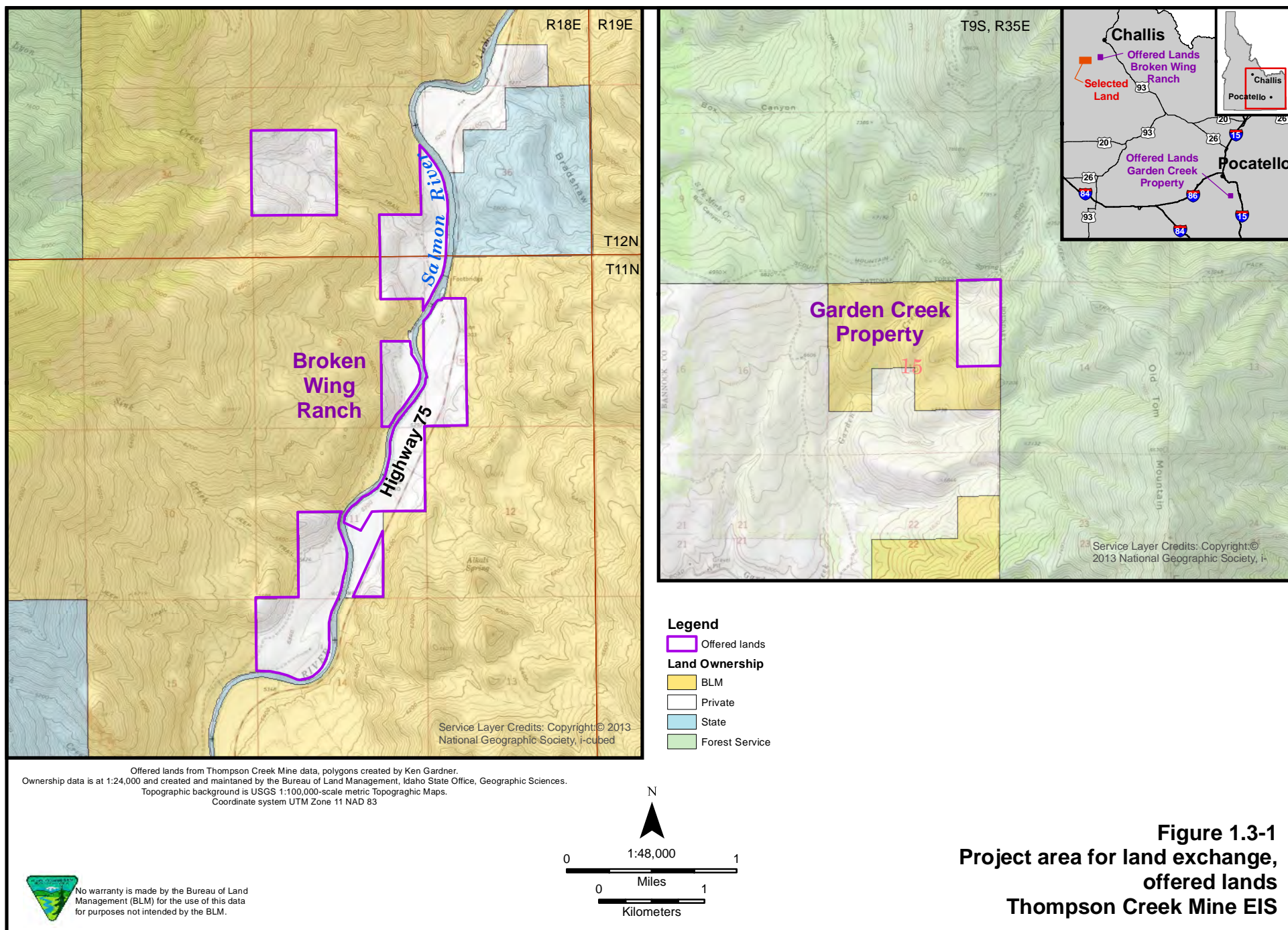


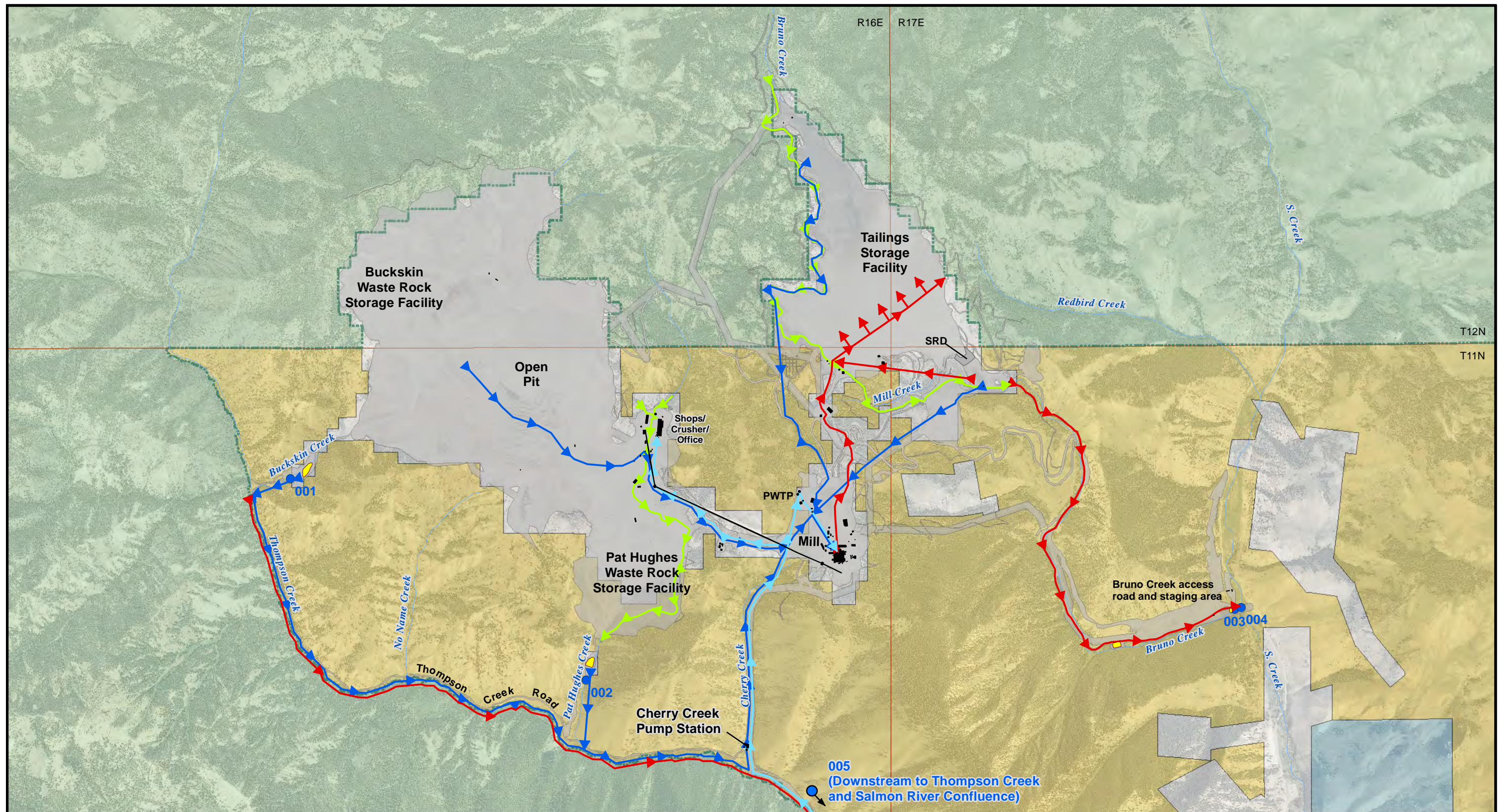
Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 1.2-1
Project area, MMPO area and selected land
Thompson Creek Mine EIS





Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
Aerial image NAIP 2009
Coordinate system UTM Zone 11 NAD 83

Legend

- Existing mining disturbance
- Existing mine structures
- NPDES outfall
- Sediment ponds

- Mine waste water**
- Fresh water flow
 - Runoff diversion water flow
 - Recycle water flow
 - Wastewater flow

- Land Ownership**
- BLM
 - Private
 - State
 - Forest Service

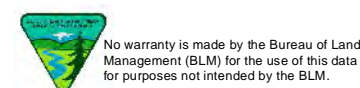
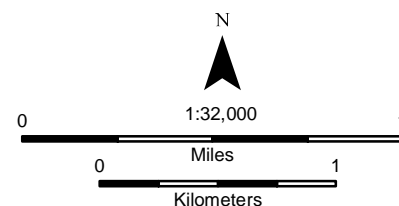
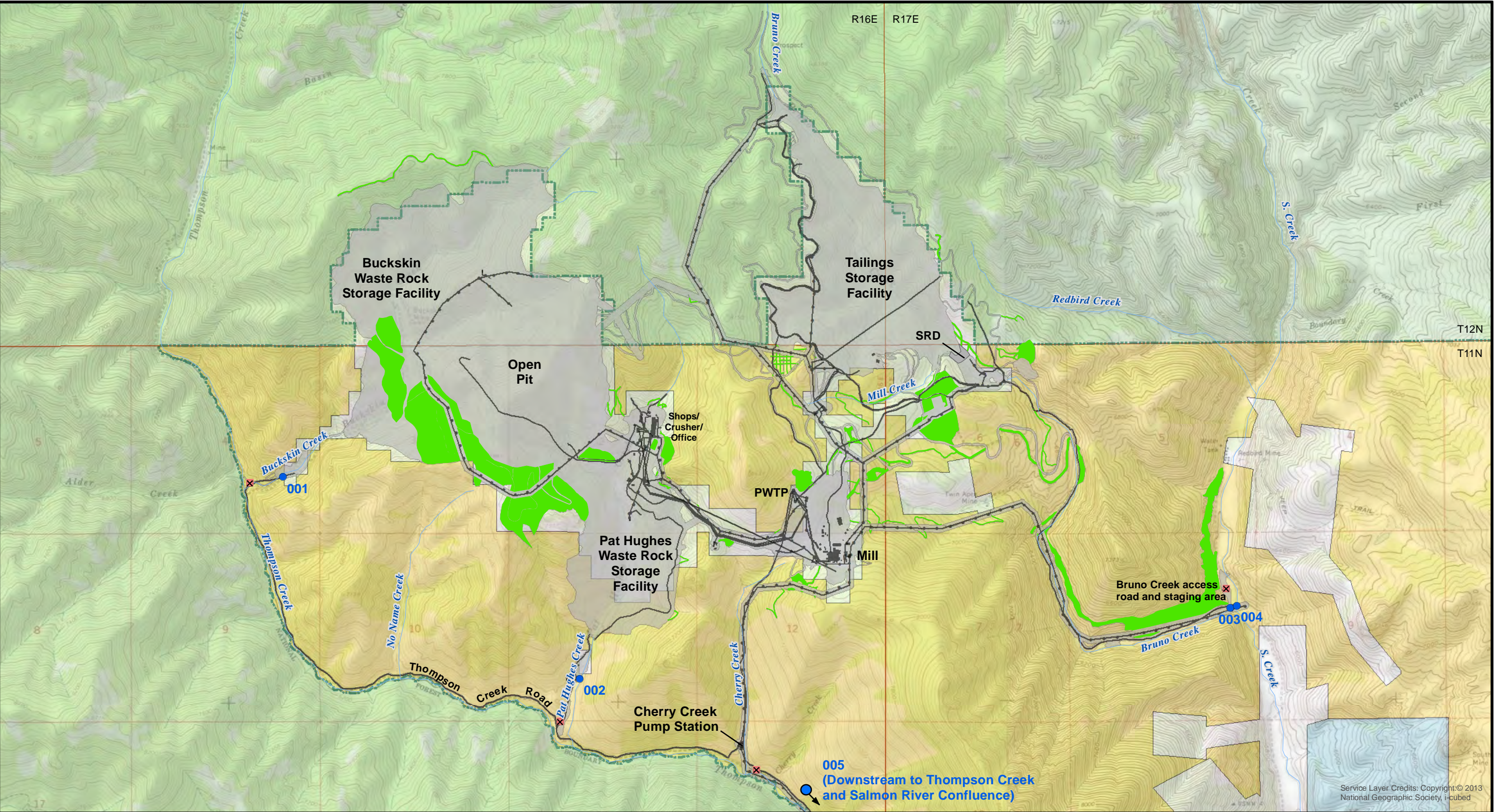
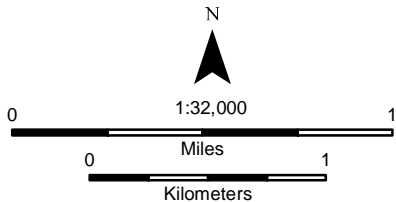


Figure 2.1-1
Current TCMC wastewater management
Thompson Creek Mine EIS



Legend

- | | | |
|-----------------------------|--------------------------|-----------------------|
| Existing mining disturbance | Existing mine structures | Land Ownership |
| Reclaimed areas | Existing power line | BLM |
| NPDES outfall | Existing pipelines | Private |
| Gate | | State |
| | | Forest Service |



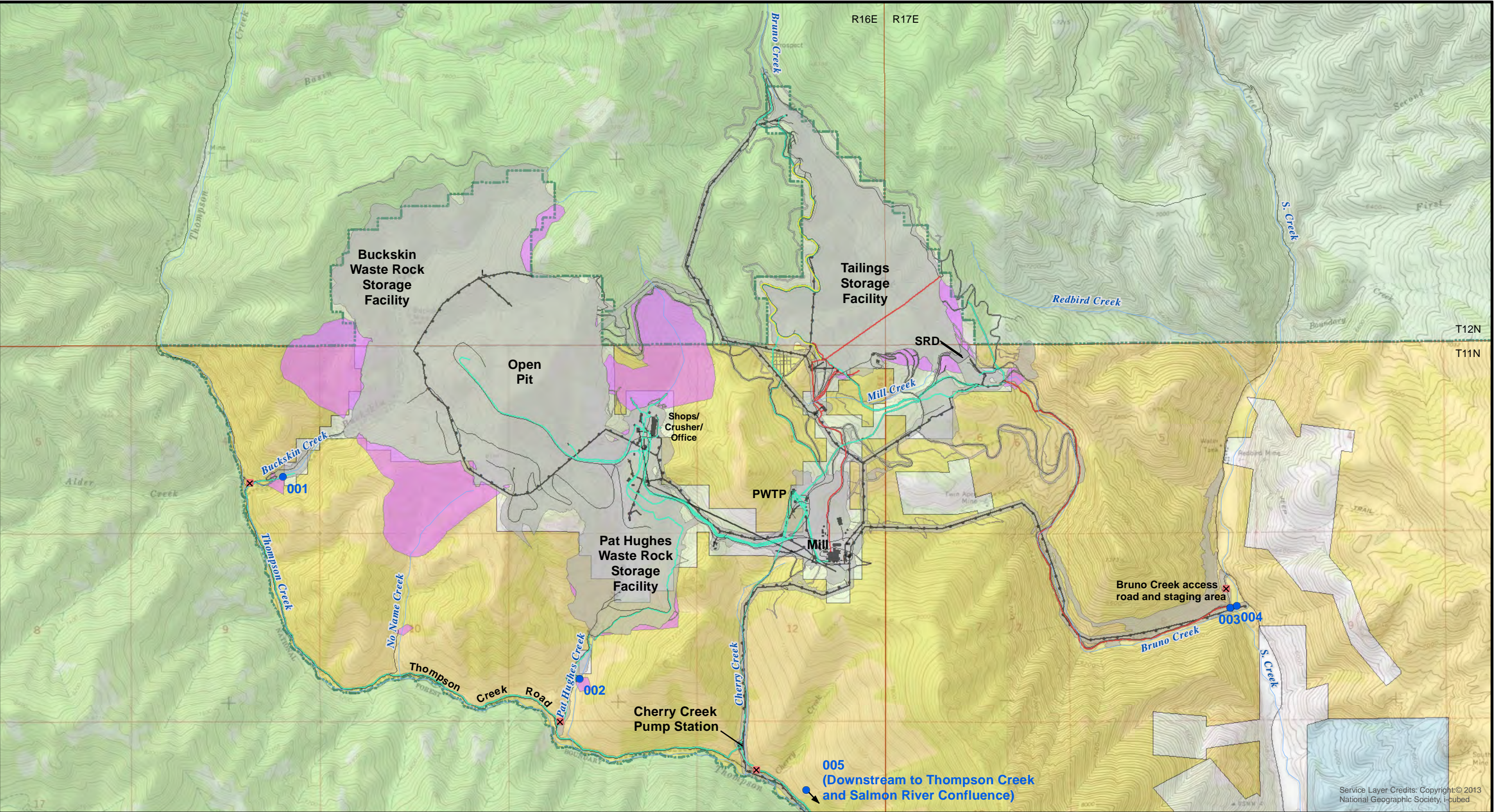
Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83



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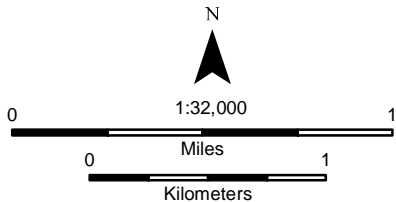
Service Layer Credits: Copyright: © 2013 National Geographic Society, i-cubed

Figure 2.1-2
Current reclaimed areas, June 2011
Thompson Creek Mine EIS



Legend

- | | | |
|-----------------------------|--------------------------|-----------------------|
| Existing mining disturbance | Existing mine structures | Land Ownership |
| Permitted but undisturbed | Existing power line | BLM |
| NPDES outfall | Pyrite pipeline | Private |
| Gate | Tailings pipeline | State |
| | Water pipeline | Forest Service |



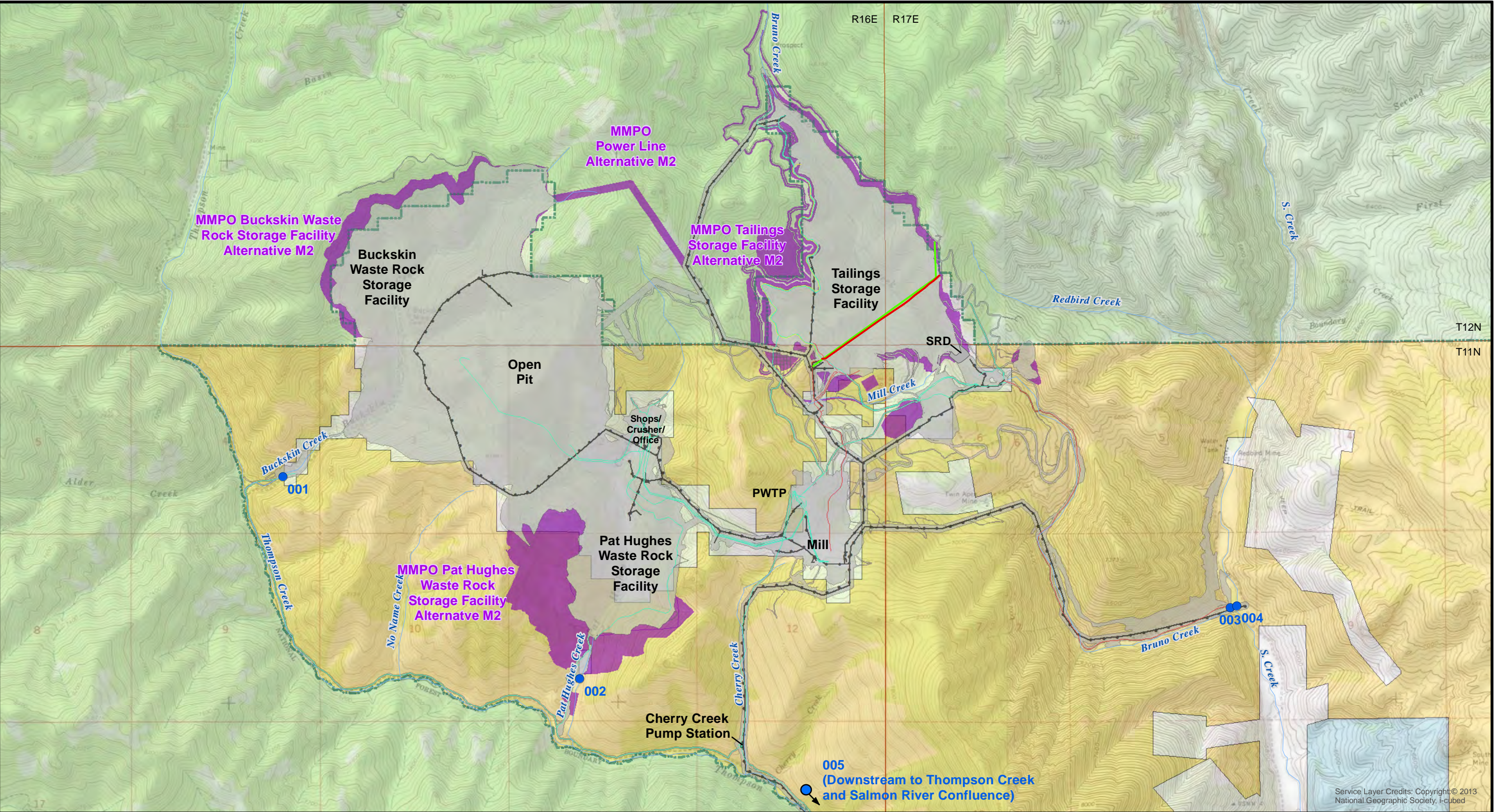
Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83



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Figure 2.1-3
MMPO Alternative M1 - No Action
Thompson Creek Mine EIS



Legend

Existing mining disturbance	Existing power line	Land Ownership
MMPO areas/Alternative M2	Pyrite pipeline	BLM
Existing embankment crest	Tailings pipeline	Private
Proposed embankment crest	Water pipeline	State
NPDES outfall		Forest Service

Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

0 1:32,000 1

0 Miles 1

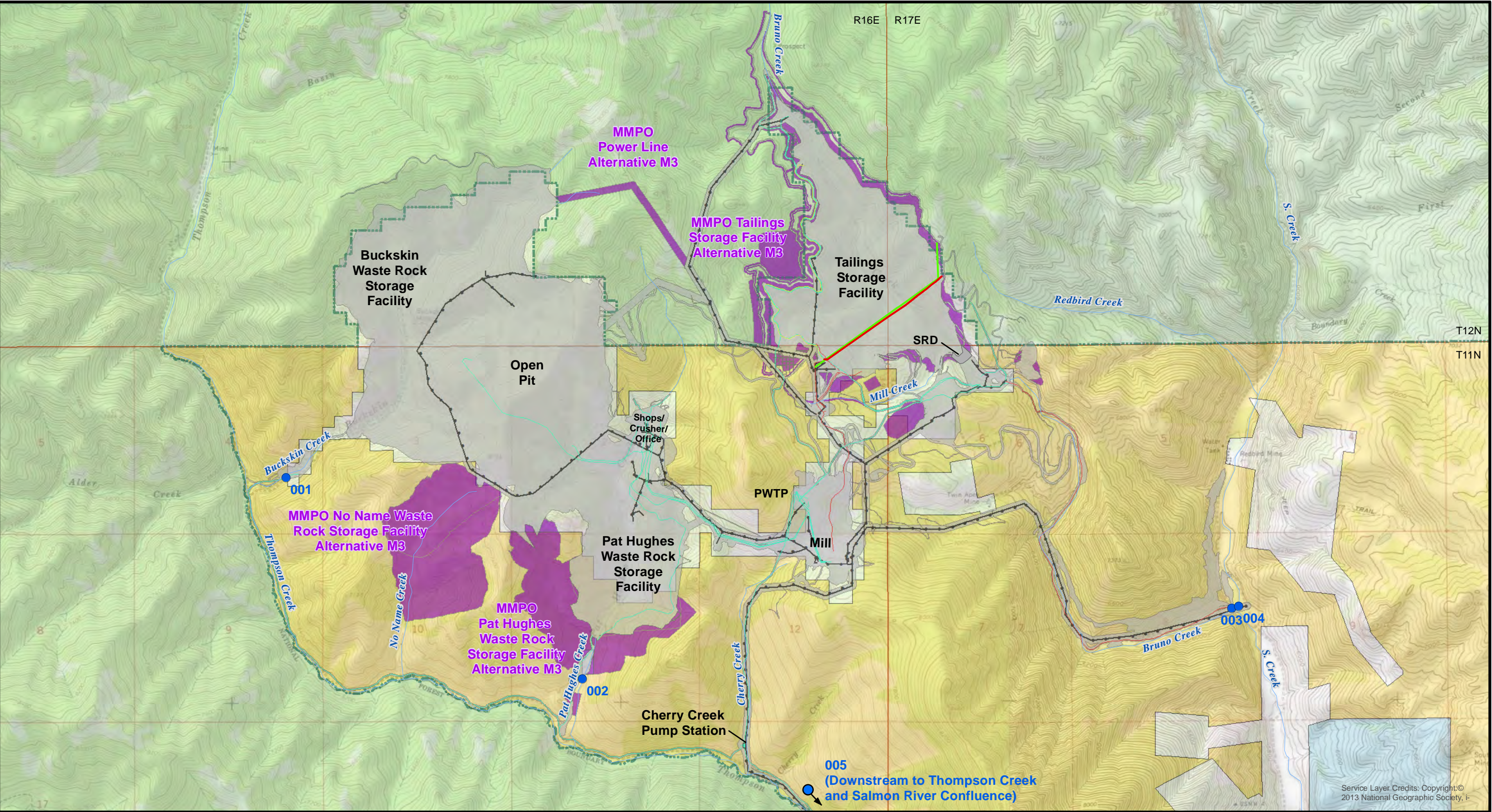
0 Kilometers 1

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Figure 2.1-4

MMPO Alternative M2 - MMPO as submitted by TCMC

Thompson Creek Mine EIS



Legend

Existing mining disturbance	Existing power line	BLM
MMPO areas/Alternative M3	Pyrite pipeline	Private
Existing embankment crest	Tailings pipeline	State
Proposed embankment crest	Water pipeline	Forest Service
NPDES outfall		

Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
Alternative data from Thompson Creek Mine drawing files and converted to shapefiles.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83

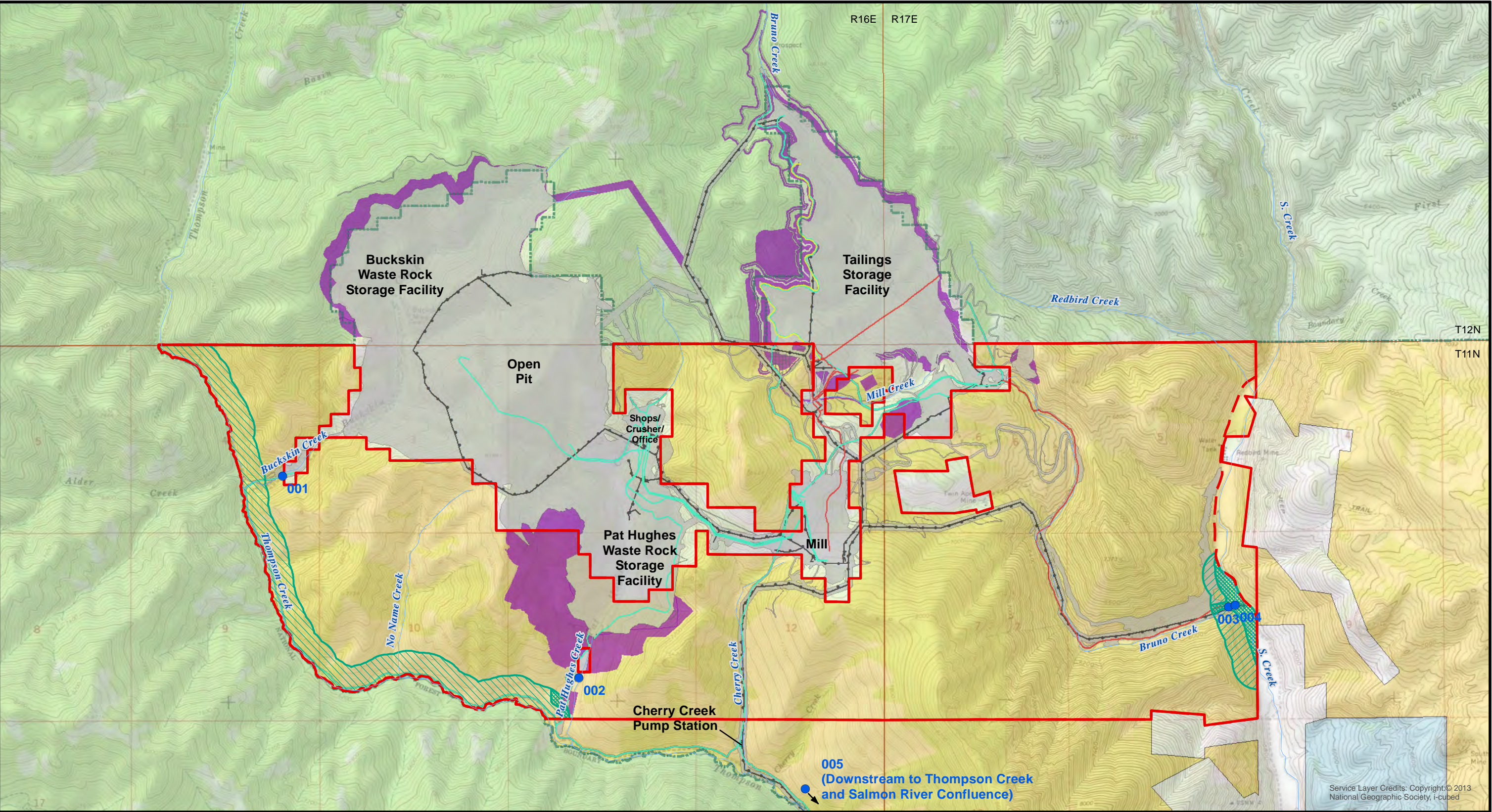
0 1:32,000 1

0 Miles 1

0 Kilometers 1

No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

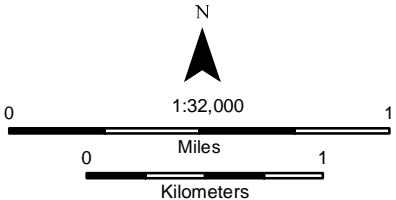
Figure 2.1-5
MMPO Alternative M3 - No Name WRSF
Thompson Creek Mine EIS



Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83

Legend

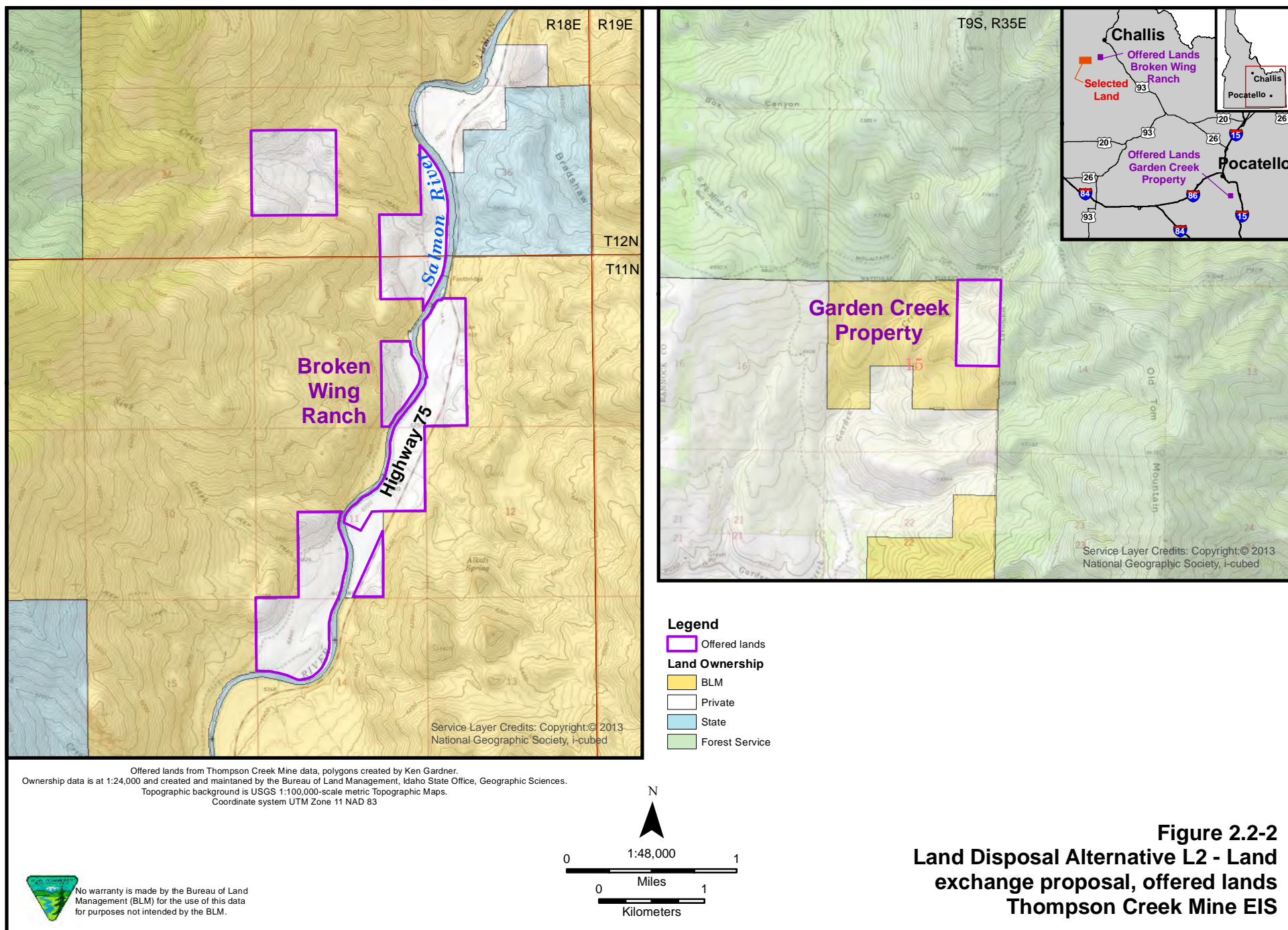
- | | | | |
|------------------------------|------------------------------|---------------------|-----------------------|
| Alternative L2 selected land | Thompson Creek easement area | Existing power line | Land Ownership |
| Modified east boundary | S. Creek easement area | Pyrite pipeline | BLM |
| Existing mining disturbance | Easement exclusion area | Tailings pipeline | Private |
| MMPO areas/Alternative M2 | NPDES outfall | Water pipeline | State |
| | | | Forest Service |

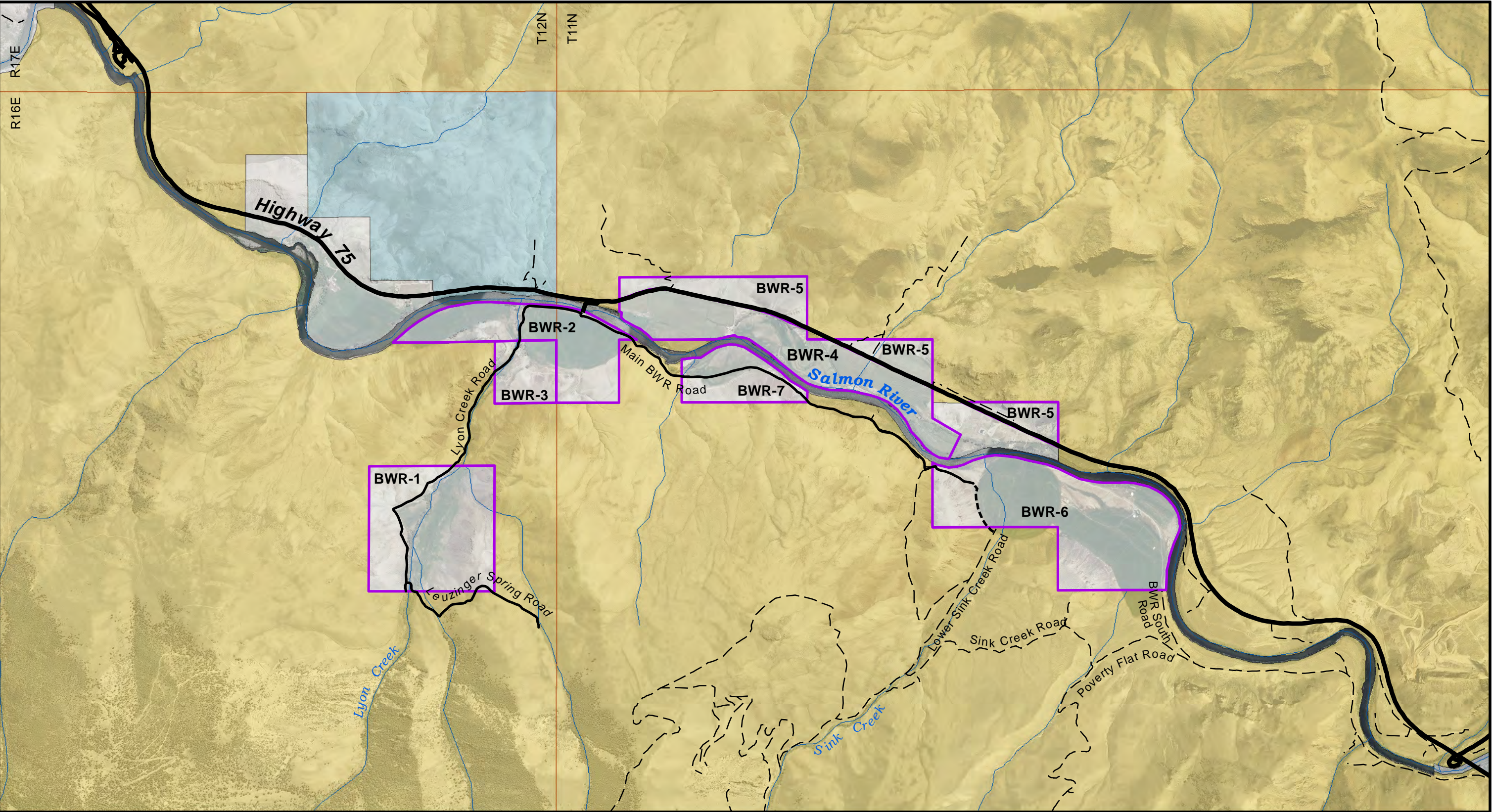


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Figure 2.2-1
Land Disposal Alternative L2 - Land exchange proposal, selected land Thompson Creek Mine EIS



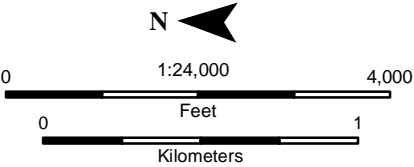


NEPA parcels for the Broken Wing Ranch from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Aerial image NAIP 2009
Coordinate system UTM Zone 11 NAD 83

Legend

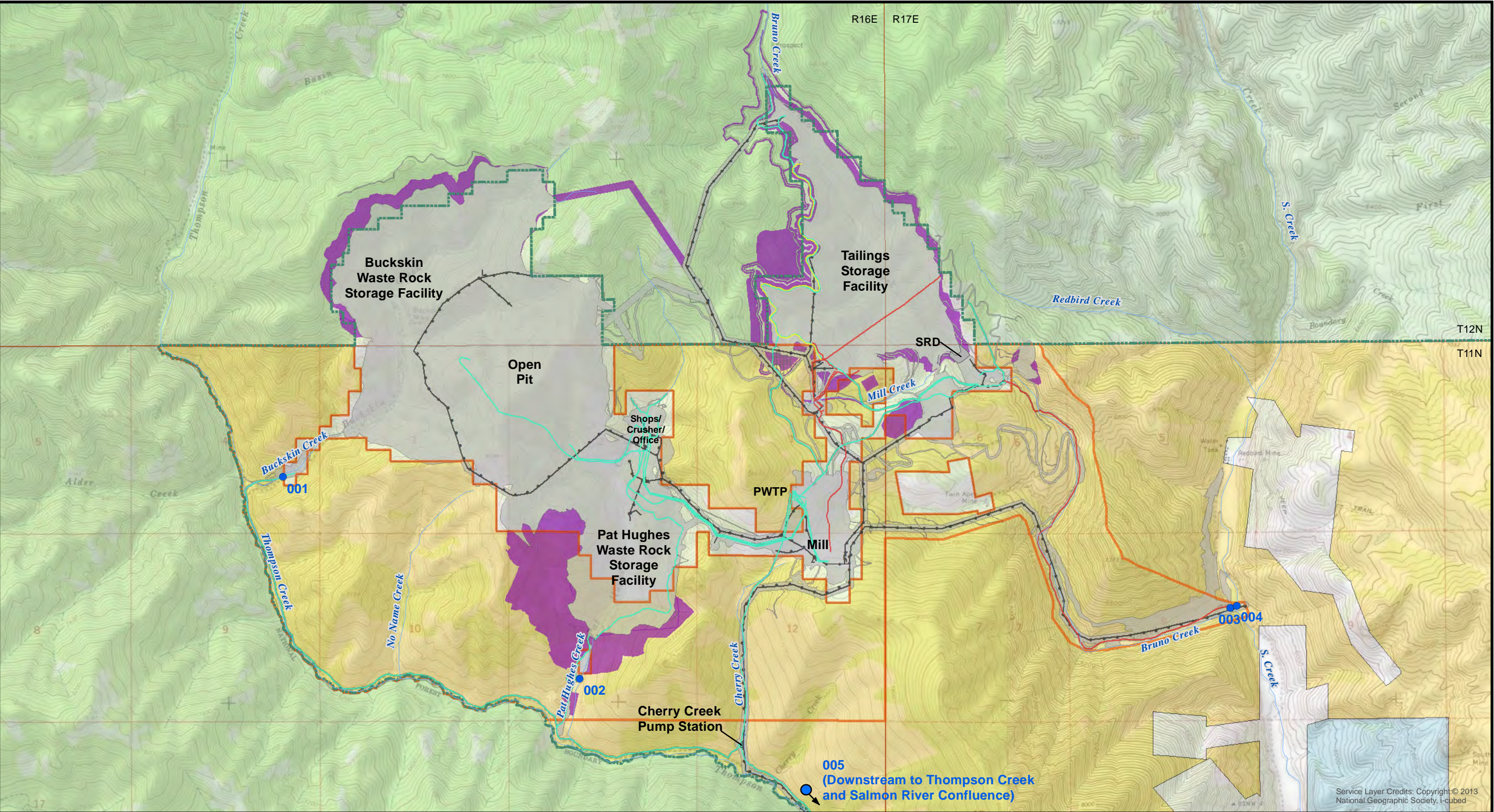
- Broken Wing Ranch
- Main Broken Wing Ranch access
- Main Broken Wing Ranch access (not yet constructed)
- 2WD road (Highway 75)
- Primitive road
- Stream

- Land Ownership**
- BLM
 - Private
 - State
 - Forest Service



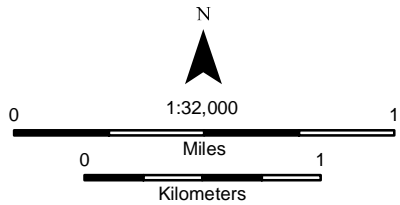
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 2.2-3
Land disposal alternatives - Broken
Wing Ranch NEPA subparcels
Thompson Creek Mine EIS



Legend

- | | | |
|------------------------------|---------------------|-----------------------|
| Alternative L4 selected land | Existing power line | Land Ownership |
| Existing mining disturbance | Pyrite pipeline | BLM |
| MMPO areas/Alternative M2 | Tailings pipeline | Private |
| NPDES outfall | Water pipeline | State |
| | | Forest Service |

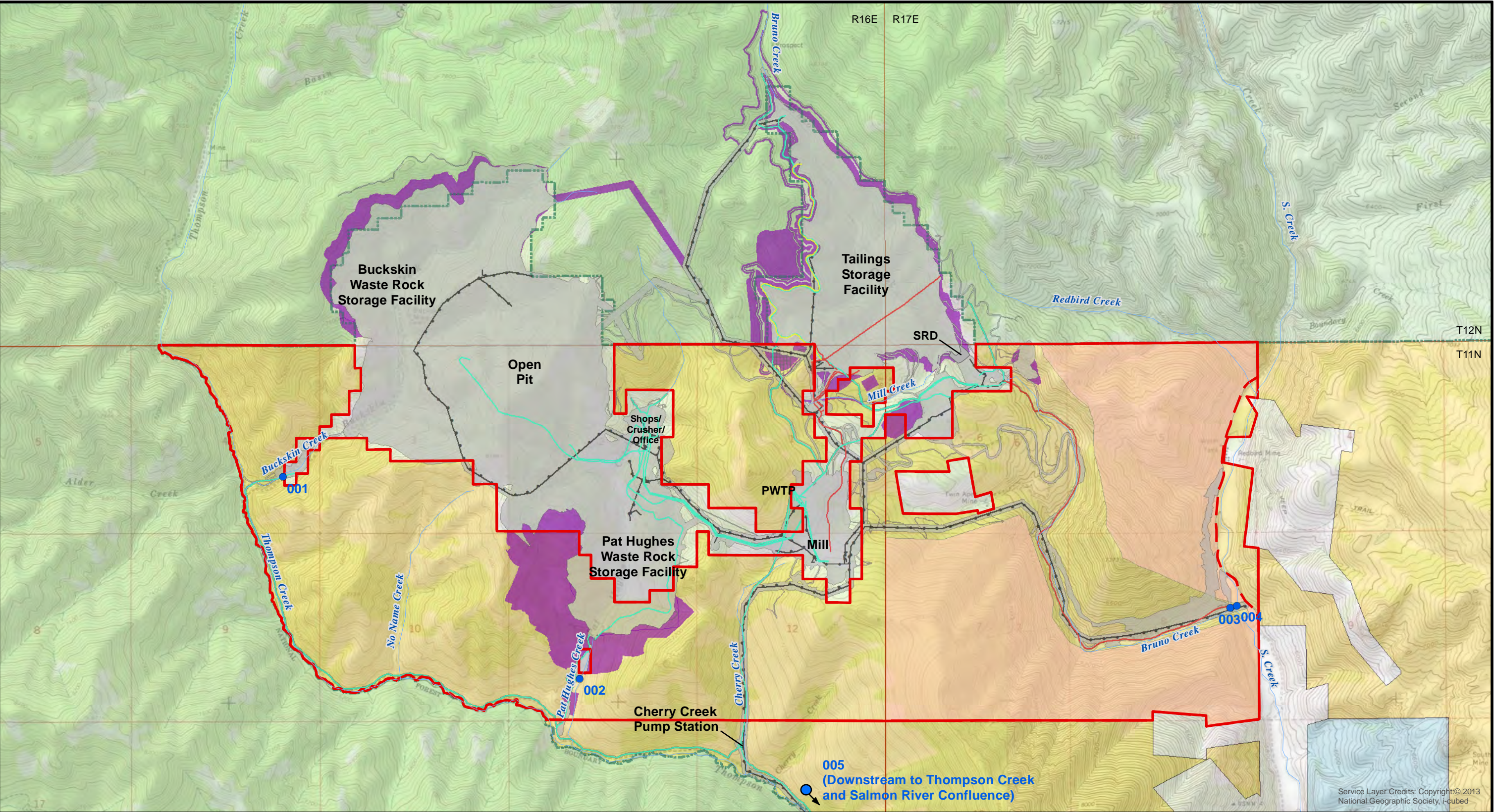


Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

















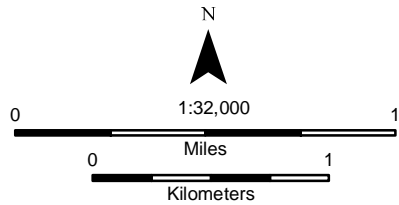
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 2.2-4
Land Disposal Alternative L4 - Reduced
area land exchange
Thompson Creek Mine EIS



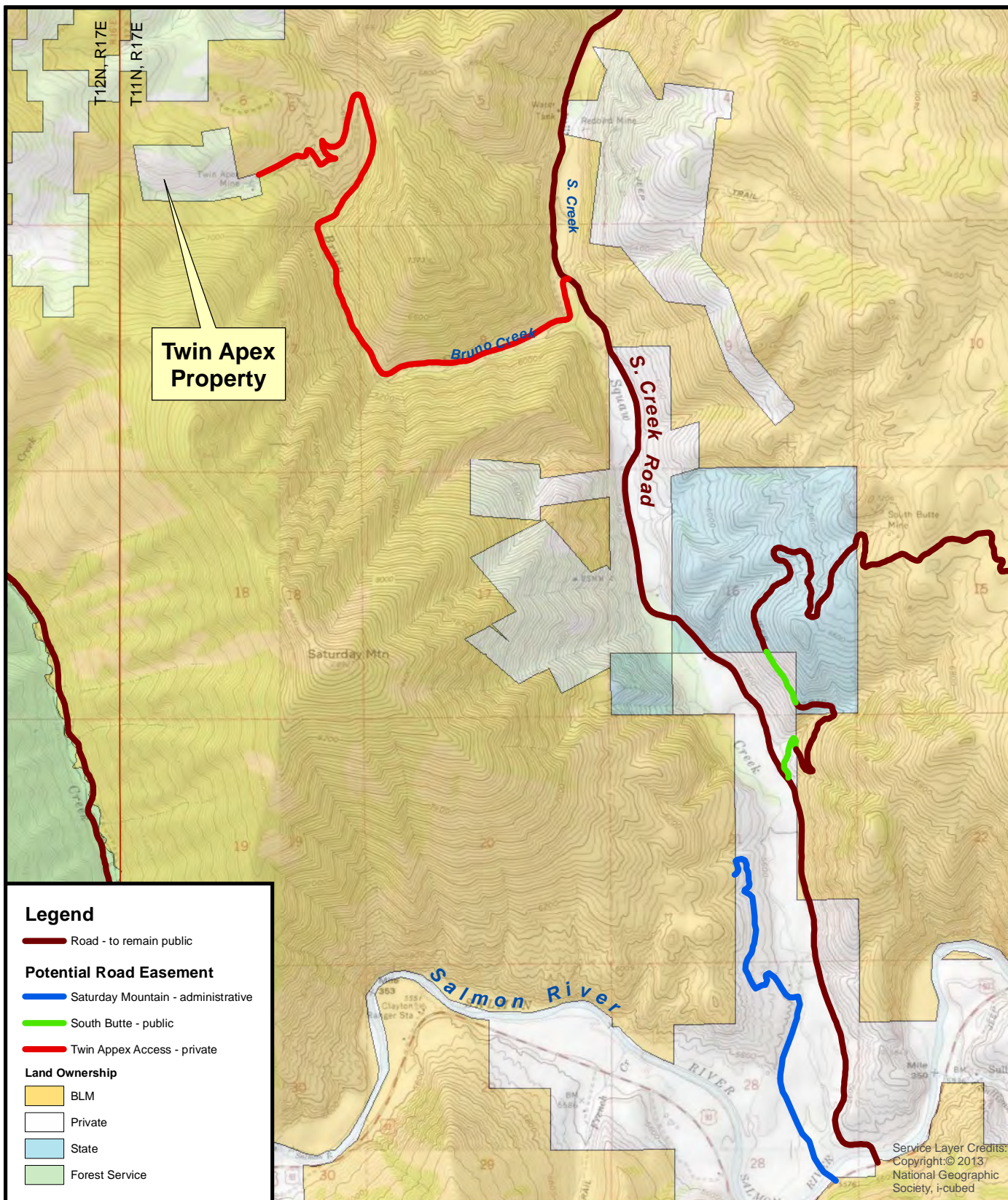
Legend

- | | | |
|--|---|--|
|  Alternative L5 - selected land |  NPDES outfall | Land Ownership |
|  Modified east boundary |  Existing power line |  BLM |
|  Reduced area easement |  Pyrite pipeline |  Private |
|  Existing mining disturbance |  Tailings pipeline |  State |
|  MMPO areas/Alternative M2 |  Water pipeline |  Forest Service |



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

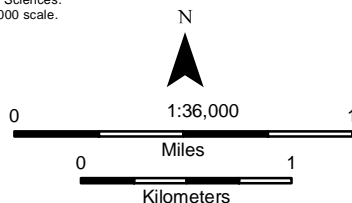
Figure 2.2-5
Land Disposal Alternative L5 - Reduced
area land exchange with easement
Thompson Creek Mine EIS

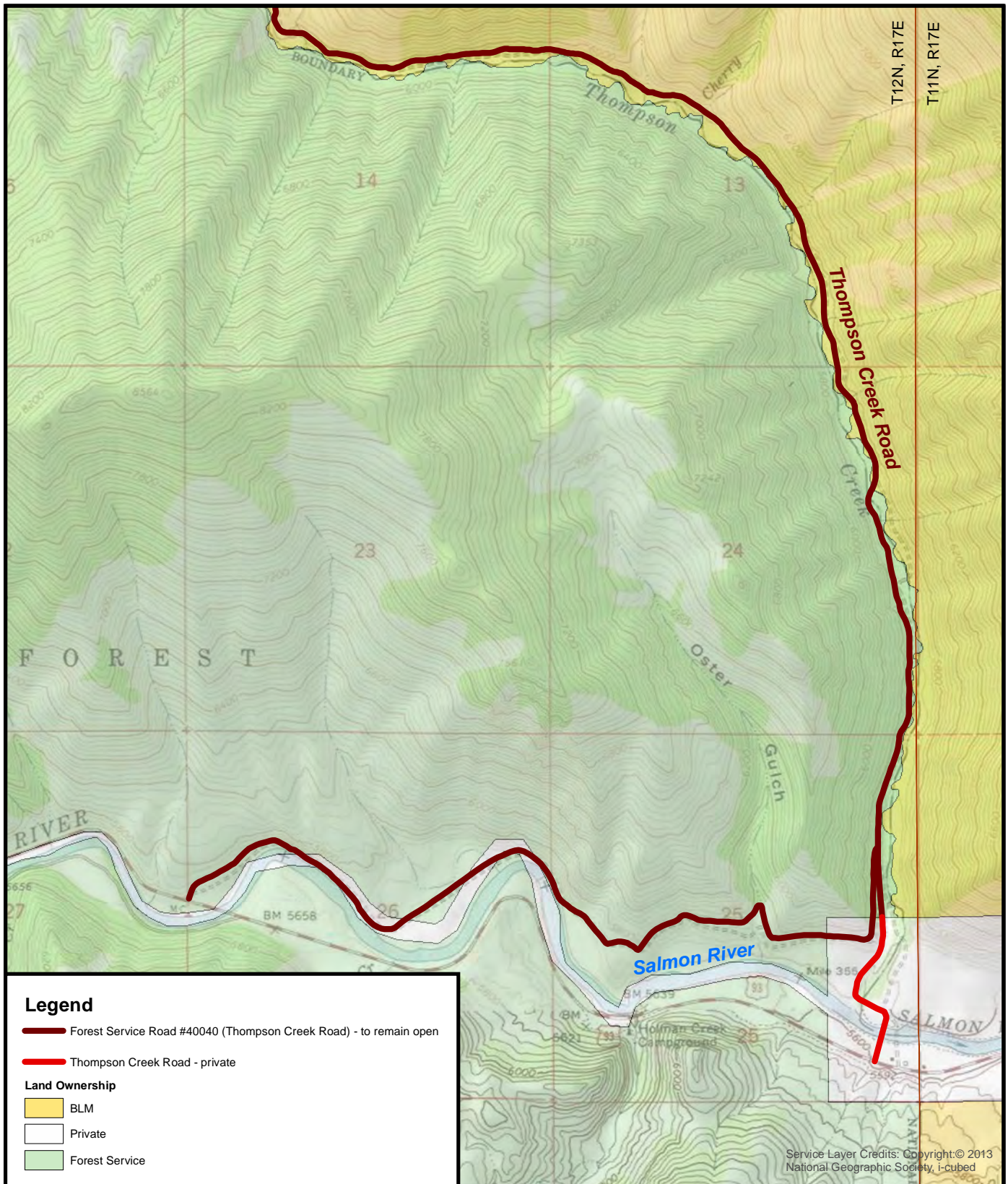


Potential Road Easement data developed by Ken Gardner, BLM.
Ownership data is at 1:24,000 and created and maintained by the
Bureau of Land Management, Idaho State Office, Geographic Sciences.
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.





Potential Road Easement data developed by Ken Gardner, BLM.
 Ownership data is at 1:24,000 and created and maintained by the
 Bureau of Land Management, Idaho State Office, Geographic Sciences.
 Topographic background from USGS 7.5' Quadangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

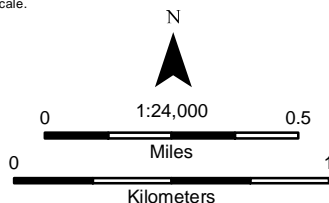


Figure 2.2-7
Land disposal alternatives -
Thompson Creek road access
Thompson Creek Mine EIS

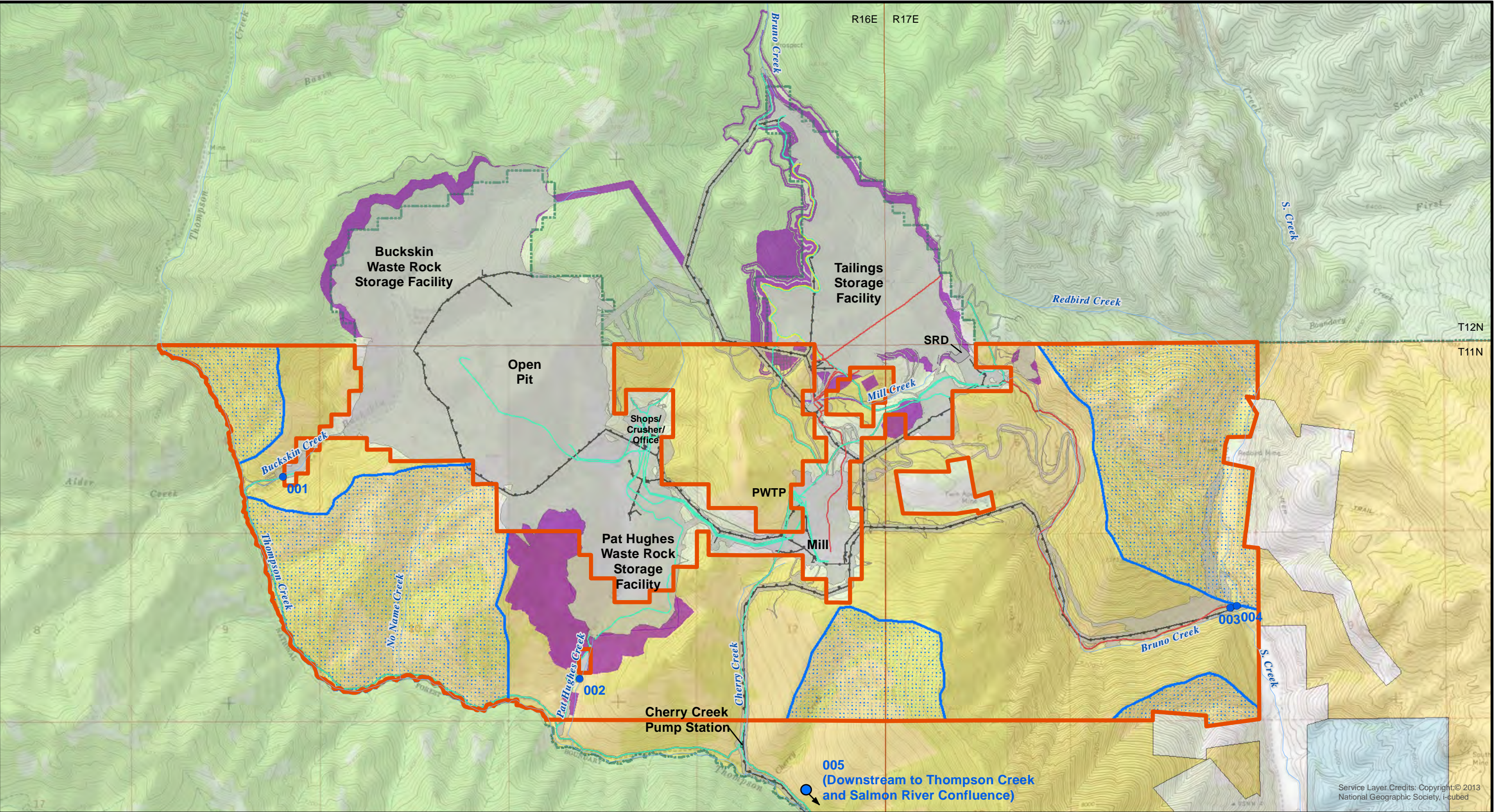


Figure 2.2-8
Land disposal alternative - public
access to selected land
Thompson Creek Mine EIS

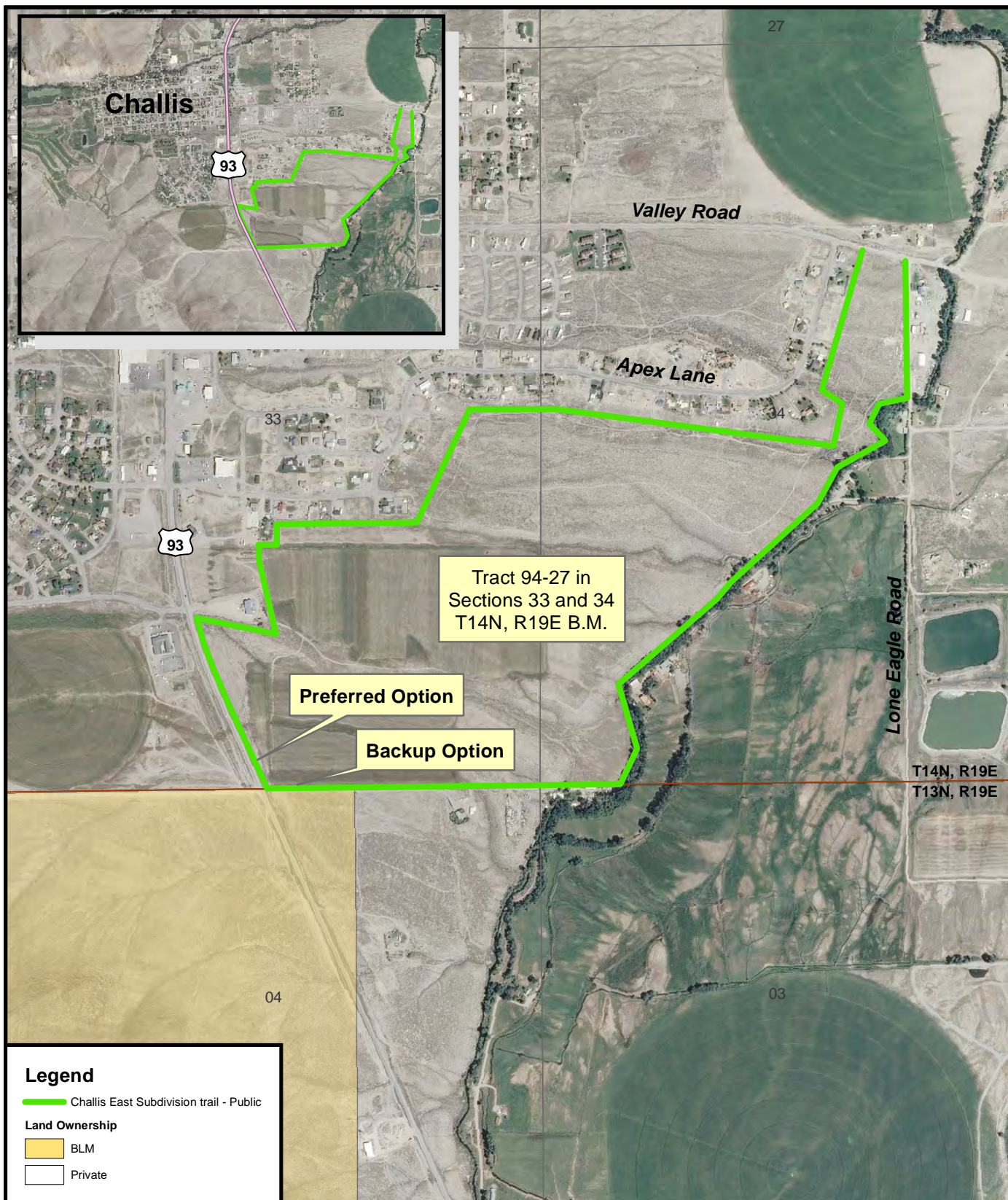
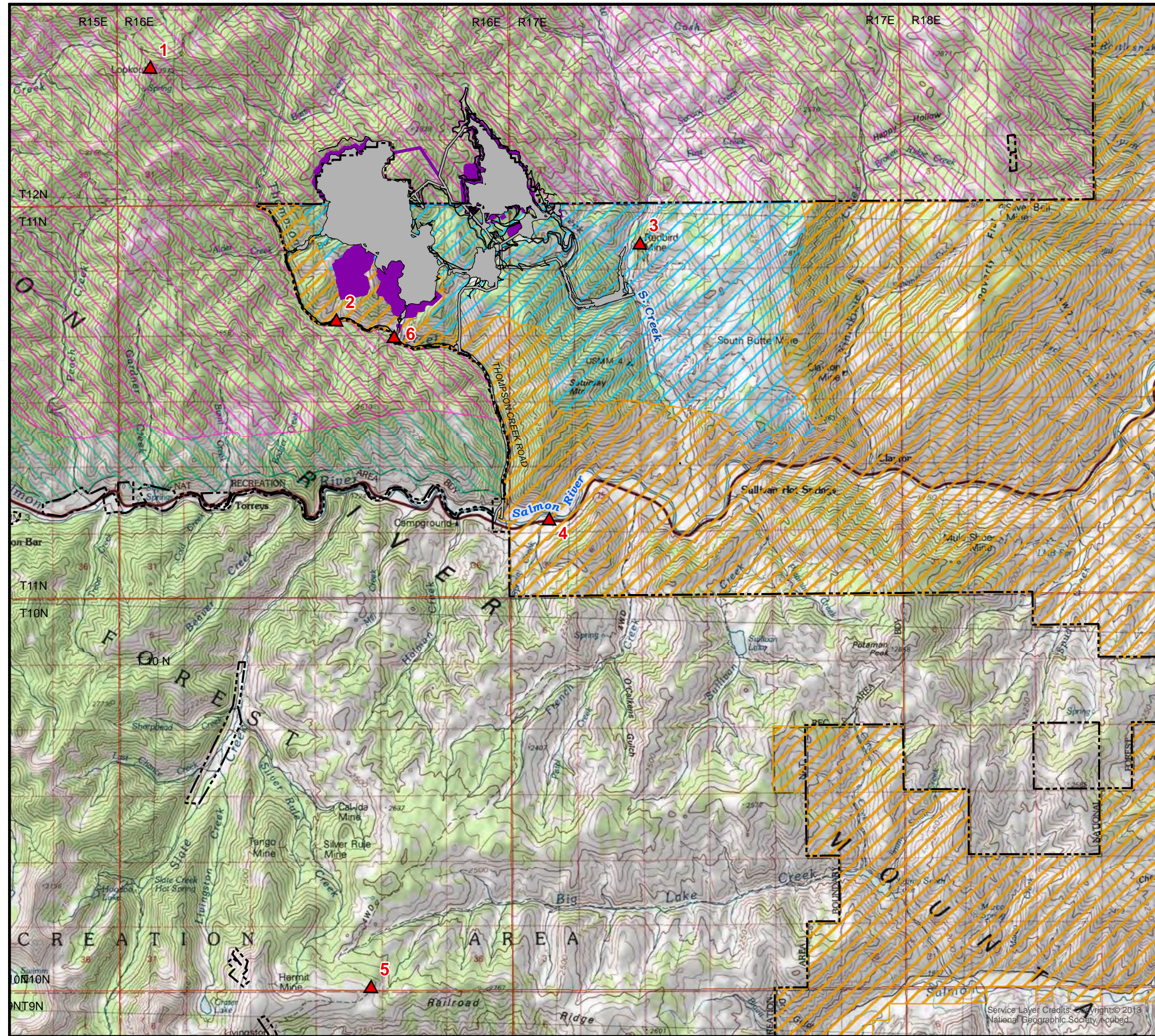











Figure 2.2-9
Land disposal alternatives - trail
easement, Challis East Subdivision
Thompson Creek Mine EIS



Legend

-  Existing mining disturbance
-  MMPO areas/Alternatives M2 and M3
-  Forest Service Boundary

KOP Locations

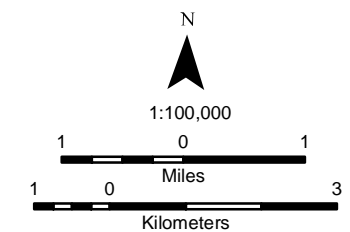
-  1 - Custer Lookout
-  2 - No Name Drainage
-  3 - South Butte
-  4 - Highway 75
-  5 - Railroad Ridge
-  6 - Pat Hughes Waste Rock Storage Facility

Visual Resource Management Classes

-  II
-  III

Visual Quality Objectives

-  M
-  R

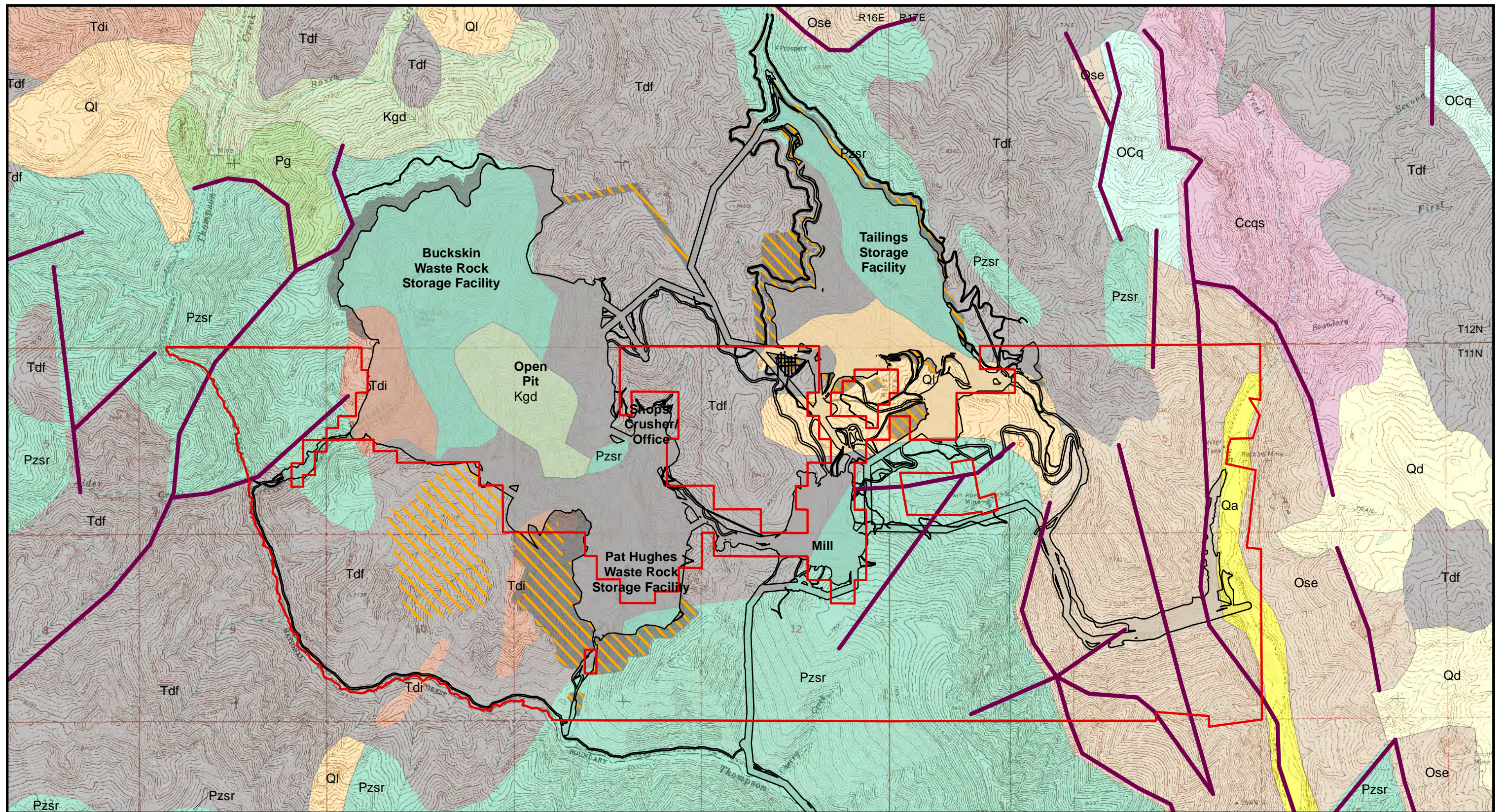


Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner.
Visual Resource Management Area (VRM) from Bureau of Land Management, Idaho State Office. Visual Quality Objectives (VQO)
from USFS Corporate Data
Topographic background from USGS 100,00-scale metric topographic map and NAIP 2009 imagery.
Coordinate system UTM Zone 11 NAD 83



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Figure 3.11-1
Visual resource information,
MMPO area and selected land
Thompson Creek Mine EIS



Legend

- Selected land
- Existing mining disturbance
- MMPO areas/Alternative M2
- MMPO areas/Alternative M3

Geology

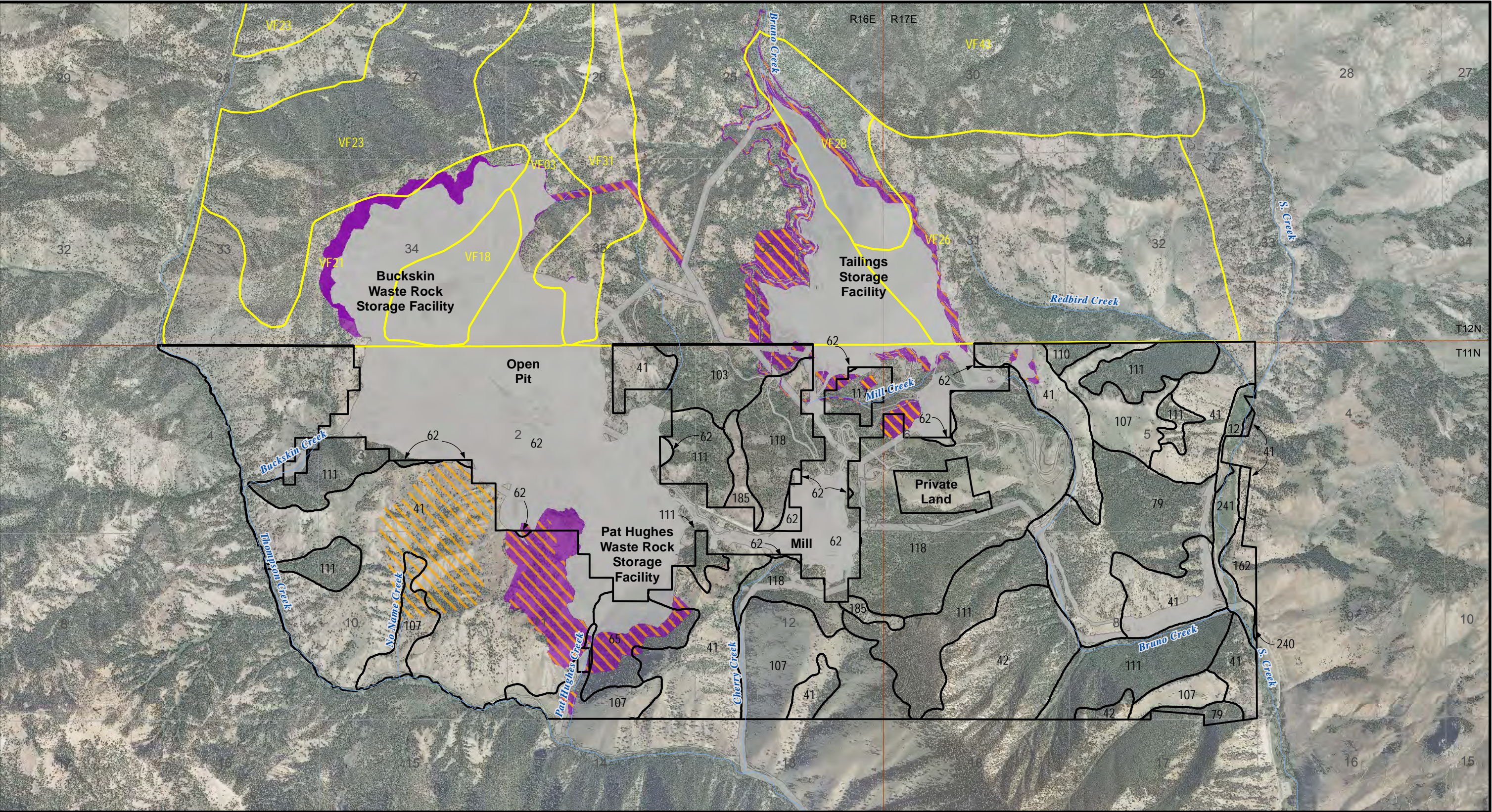
- Qa, Alluvium undivided
- Qd, Quaternary deposits undivided
- Qi, Landslide and related deposits
- Ccqs, Quartzite shale and carbonate rocks of the Squaw Creek area
- Kgd, Biotite granodiorite
- OCq, Quartzite
- Ose, Saturday Mountain Formation Kinnikinnick Quartzite and Ella Dolomite undivided
- Pg, Grand Prize Formation
- Pzsr, Salmon River assemblage
- Tdf, Dacitic and rhyodacitic lava
- Tdi, Dikes and plugs of intermediate composition
- Fault

Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner.
 Geologic data from digital geology from Fisher and Johnson supplied by Ken Gardner of BLM.
 Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83

0 1:32,000 1
 0 Miles 1
 0 Kilometers 1

No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.2-1
Surficial geology of the mine and selected land
Thompson Creek Mine EIS



Legend

- Existing mining disturbance
- MMPO areas/Alternative M2
- MMPO areas/Alternative M3
- Forest Service landtypes
- NRCS soils

Map Unit	Soil Name	Map Unit	Soil Name
12	Biglost-Copperbasin complex, 0-4% slopes	110	Lag very cobbly loam, 20-40% slopes
41	Cryolls-Rubble Land-Rock Outcrop complex, 50-80% slopes	111	Lag very cobbly loam, 40-70% slopes
42	Cryolls-Rubble Land-Rock Outcrop complex, 50-80% slopes	118	Lemo-Friedman complex, 20-50% slopes
62	Dumps, Mine	162	Parkay-Nurkey complex, 20-50% slopes
65	Ezbin-Zeebar-Nielsen complex, 20-50% slopes	185	Rock Outcrop & Rubble Land, very steep
79	Gany gravelly loam, 30-60% slopes	240	Wiskisprings-Biglost complex, 0-3% slopes
103	Ketchum complex, 20-50% slopes	241	Wiskisprings-Biglost-Copperbasin complex, 0-3% slopes
107	Klug, Low Precipitation-Povey complex, 25-60% slopes		

NOTE: Map Unit designations were manually changed to correspond with Unit designations listed in NRCS Physical Soil Properties report dated 01/29/2008 as needed.

Map Unit	Landtype	Map Unit	Landtype
VF03	Steep Headlands -Timbered; Moderately Deep-Loamy-Skeletal Soils, 46-66% slopes	VF28	Strongly Dissected Mountain Slope-lands-Timbered; Moderately Deep-Loamy to Sandy-Skeletal Soils, 40-65% slopes
VF21	Moderately Dissected Mountain Slope-lands; Shallow to Moderately Deep-Loamy to Sandy-Skeletal Soils, 30-80% slopes	VF31	Fluvial Ridgeland-Rocky; Shallow-Loamy to Loamy-Skeletal Soils, 40-70% slopes
VF23	Moderately Dissected Mountain Slope-lands-Timbered; Shallow to Deep-Loamy-Skeletal and Sandy-Skeletal Soils, 45-60% slopes	VF43	Unstable Fluvial Slopes-Timbered; Moderately Deep to Deep-Loamy to Loamy- Skeletal Soils, 21-65% slopes
VF26	Strongly Dissected Mountain Slope-lands; Shallow to Deep-Loamy to Sandy-Skeletal Soils, 40-70% slopes		

Note: VF18 falls within the existing disturbance and is no longer applicable.

Soils data from NRCS SSURGO database.
Landtype data from USFS.
2009 NAIP Imagery
Coordinate system UTM Zone 11 NAD 83

No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

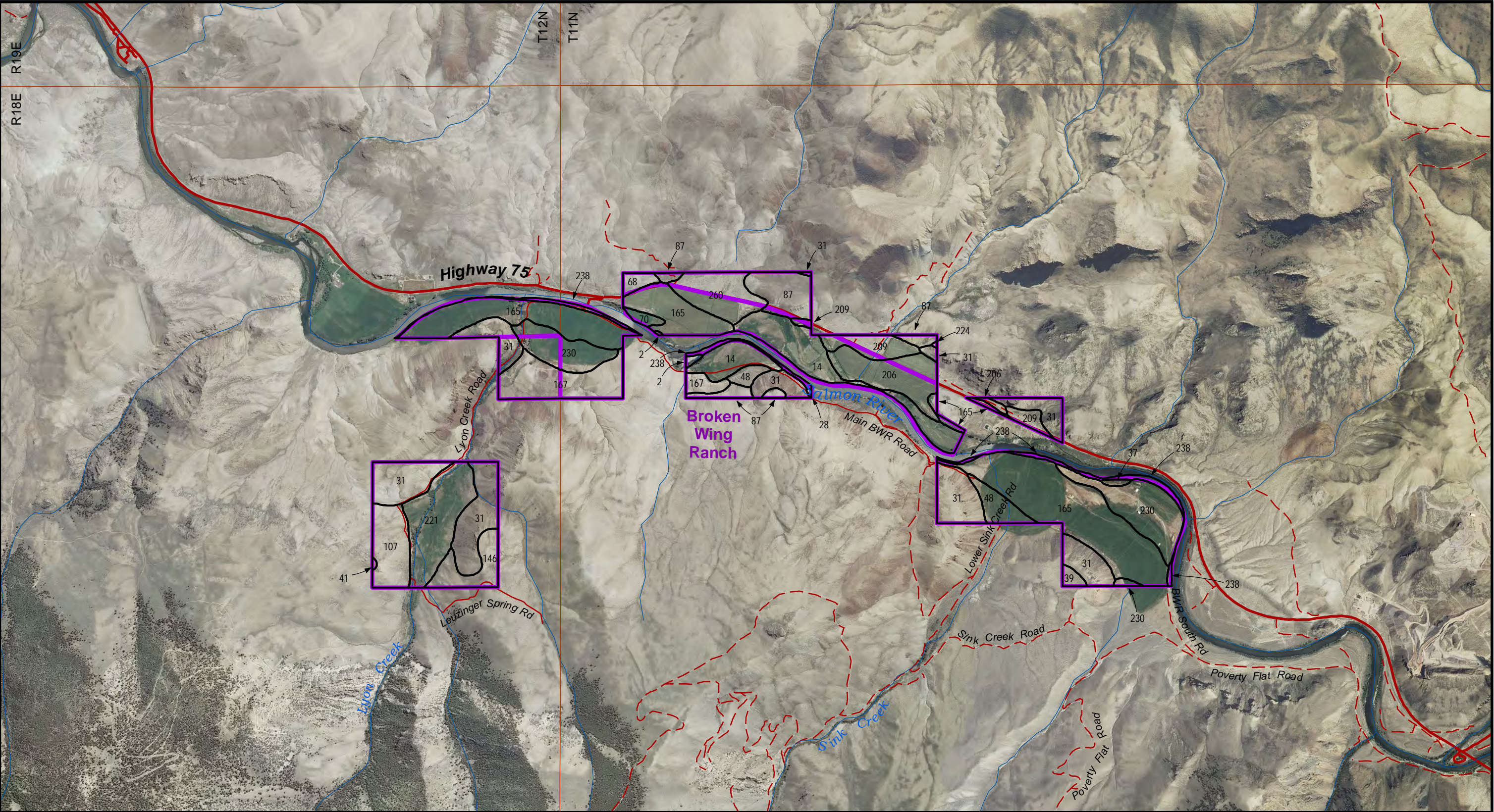
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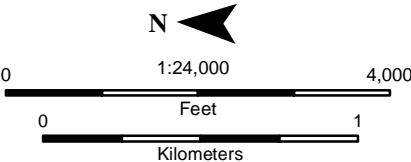
N

Figure 3.3-1
Soil map, MMPO area and selected land
Thompson Creek Mine EIS



- Legend**
- Broken Wing Ranch NEPA parcels
 - NRCS Soils
 - Main Broken Wing Ranch Access
 - 2WD road (Highway 75)
 - Primitive road
 - Stream

Map Unit	Soil Name	Map Unit	Soil Name
2	Aquents-Riverwash complex, nearly level	107	Klug, Low Precipitation-Povey complex, 25-60% slopes
14	Bigrant-Thosand-Dickeypeak complex, 0-4% slopes	146	Nurkey-Dawtonia association, 20-55% slopes
28	Bursteadt-Tohobit complex, 0-3% slopes	165	Pedoll-Dawtonia complex, 1-4% slopes
31	Calclids-Rubble Land-Rock Outcrop complex, 50-80% slopes	167	Penagul-Rosebriar complex, 20-60% slopes
37	Cowbone-Tohobit complex, 0-3% slopes	206	Sparmo-Zer complex, 1-5% slopes
39	Cronks-Venum association, 6-20% slopes	209	Sprabat-Snowslide complex, 1-8% slopes
41	Cryolls-Rubble Land-Rock Outcrop complex, 50-80% slopes	221	Typic Cryaquepts, 1-3% slopes
48	Dawtonia Gravelly Loam, 4-8% slopes	224	Venum-Rock Outcrop complex, 25-55% slopes
68	Farvant-Badland-Gradco complex, 25-60% slopes	230	Whiteknob Gravelly Loam, 2-8% slopes
70	Fezip-Lemroi-Redfish complex, 0-2% slopes	238	Wiskisprings-Biglost complex, 0-3% slopes
87	Gradco-Farvant complex, 15-30% slopes	260	Zer-Snowslide complex, 5-25% slopes



Soils data from NRCS SSURGO database.
2009 NAIP Imagery
Coordinate system UTM Zone 11 NAD 83



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Figure 3.3-2
Soil map, Broken Wing Ranch
Thompson Creek Mine EIS



Legend

- Offered lands
- Primitive road
- Trail
- Stream

Map Unit

Map Unit	Soil Name
84,	Pavohroo-Sedgway-Toponce complex, 20 to 50 percent slopes
45,	Greys-Pavohroo-Sedgway association, 8 to 20 percent slopes

Soils data from NRCS SSURGO database.
2009 NAIP Imagery
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

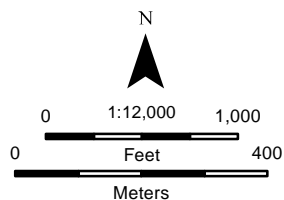


Figure 3.3-3
Soil map, Garden Creek property
Thompson Creek Mine EIS

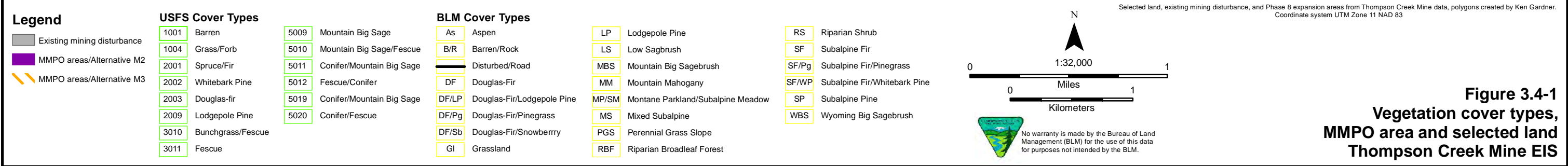
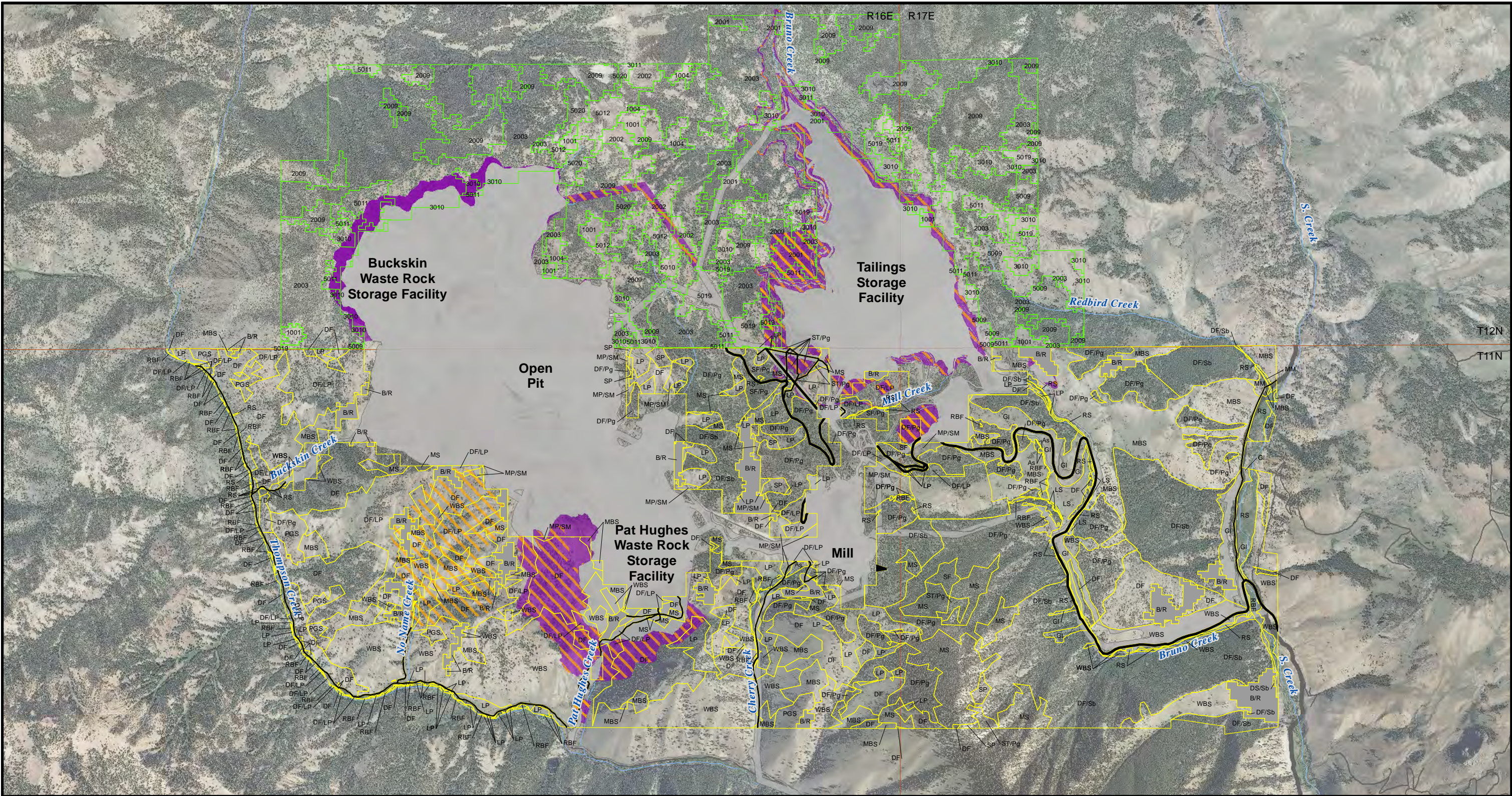
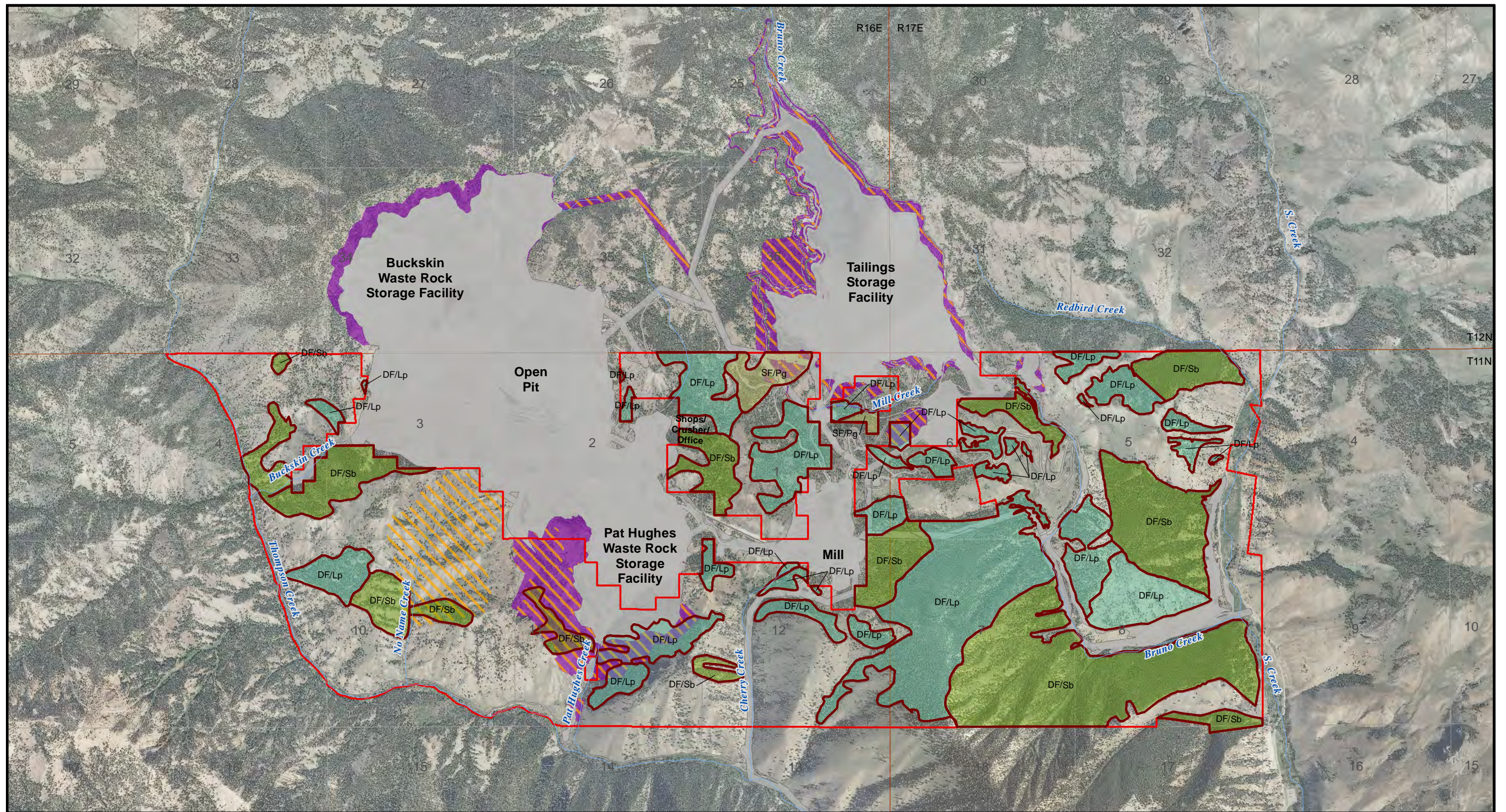


Figure 3.4-1
Vegetation cover types,
MMPO area and selected land
Thompson Creek Mine EIS



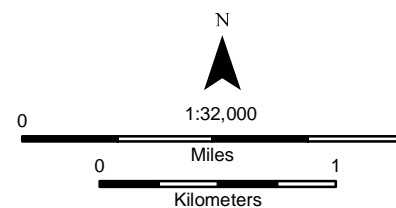
Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner.
2009 NAIP imagery
Coordinate system UTM Zone 11 NAD 83

Legend

- Selected land
- Existing mining disturbance
- MMPO areas/Alternative M2
- MMPO areas/Alternative M3

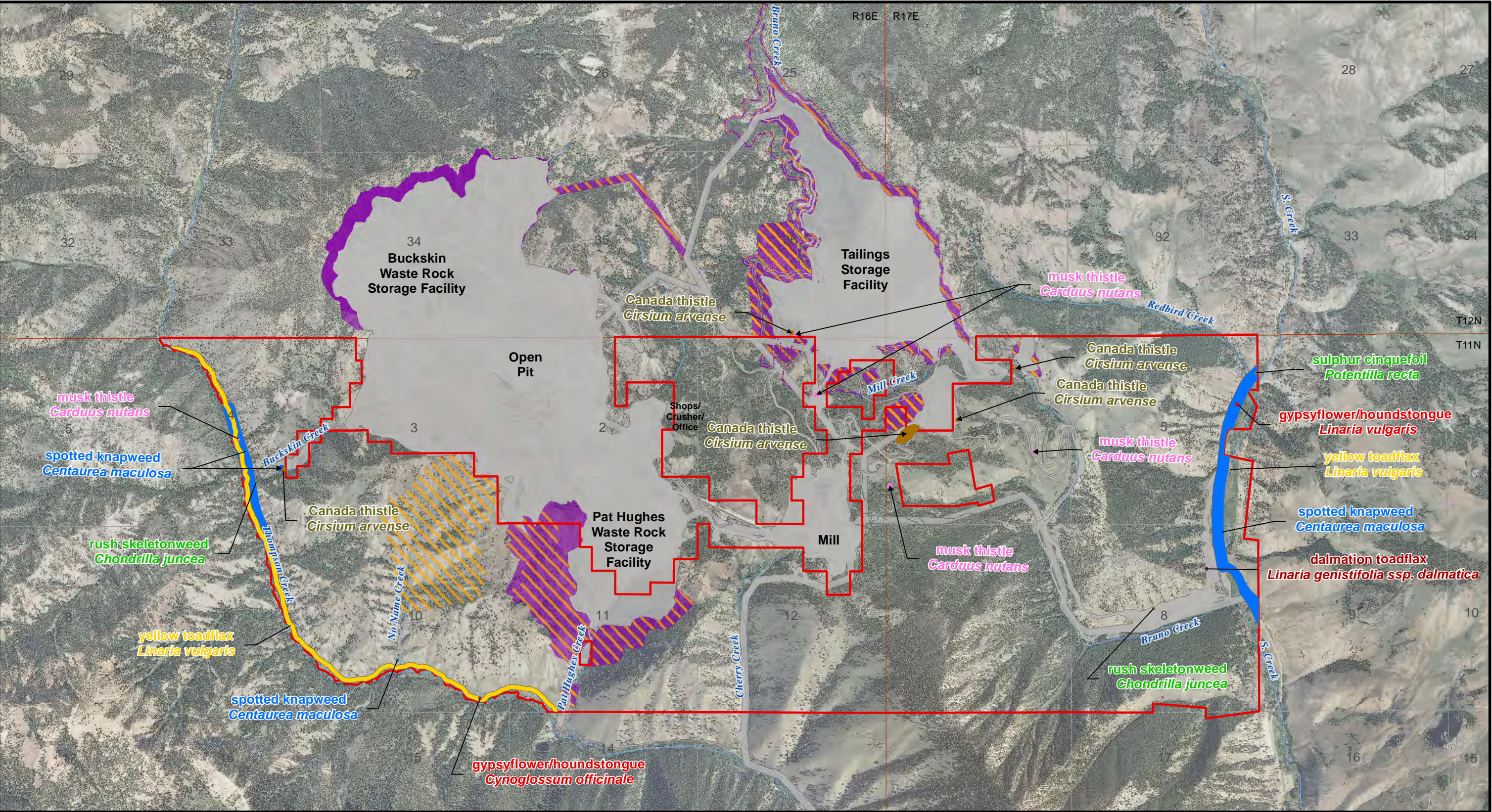
Timber Resources Stand/Habitat

- Douglas-Fir/Pinegrass
- Douglas-Fir/Snowberry
- Subalpine-Fir/Pinegrass



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.4-2
Timber production,
MMPO area and selected land
Thompson Creek Mine EIS



Legend

- Selected land
- MMPO areas/Alternative M3
- MMPO areas/Alternative M2
- Existing mining disturbance
- Stream

Noxious Weeds

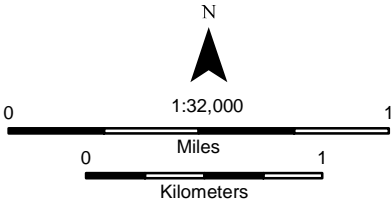
Common name, Scientific name

- Canada thistle, *Cirsium arvense*
- yellow toadflax, *Linaria vulgaris*
- dalmation toadflax, *Linaria genistifolia* ssp. *dalmatica*

- gypsyflower/houndstongue, *Cynoglossum officinale*

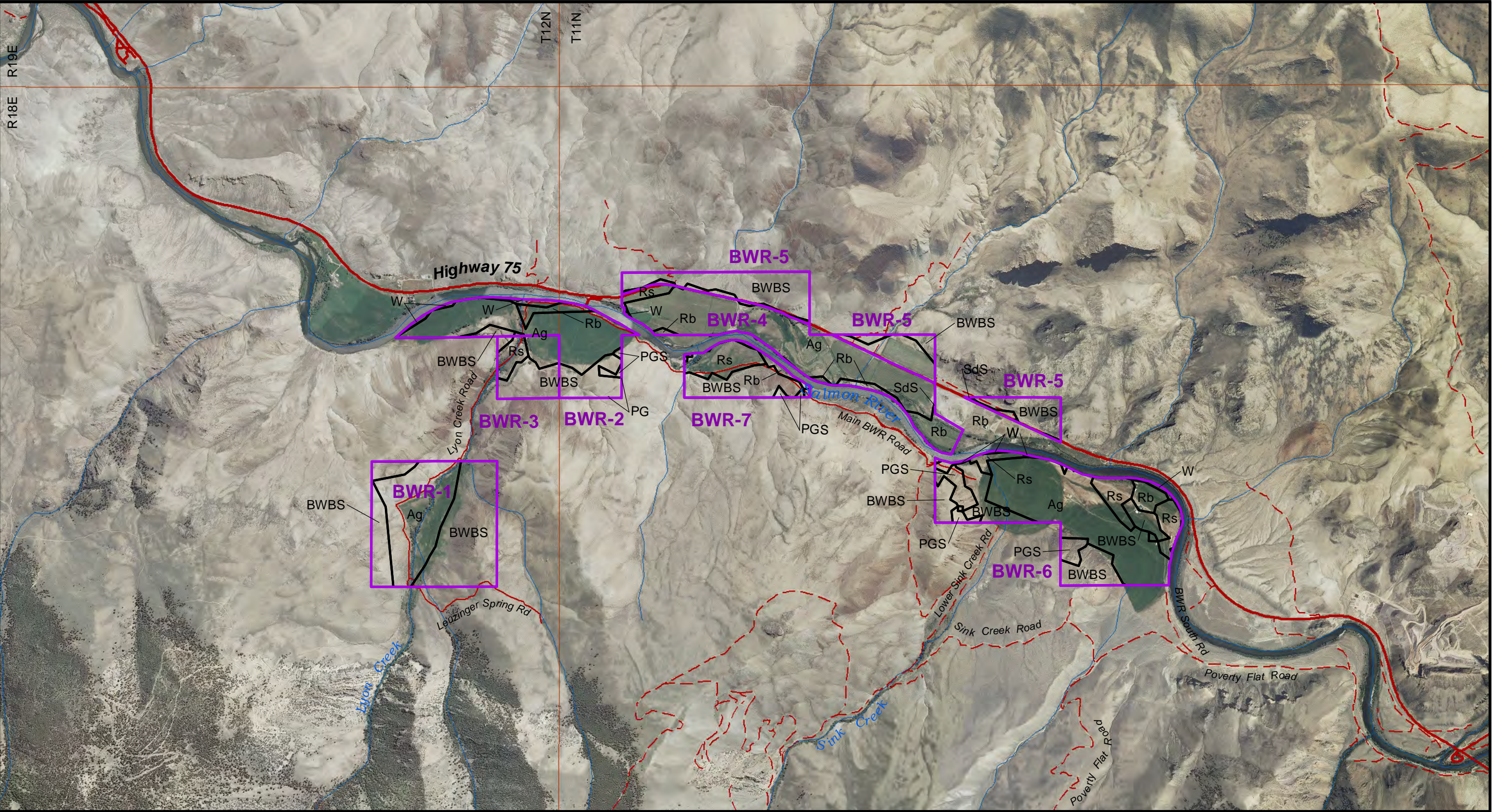
- musk thistle, *Carduus nutans*
- rush skeletonweed, *Chondrilla juncea*
- spotted knapweed, *Centaurea maculosa*
- sulphur cinquefoil, *Potentilla recta*

Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Noxious weed data from Natural Resource Information System (NRIS)
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.4-3
Noxious weed occurrences, selected land
Thompson Creek Mine EIS

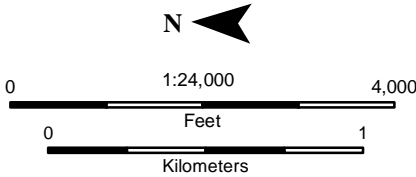


Legend

- Broken Wing Ranch NEPA parcels
- Main Broken Wing Ranch access
- 2WD road (Highway 75)
- Primitive road
- Stream

Vegetation

Map Label	Description	Map Label	Description
Ag	Agricultural	SdS	Salt-desert shrub
BWBS	Basin and Wyoming big sagebrush	W	Water
PG	Perennial grassland		
PGS	Perennial grass slope		
Rb	Riparian - broadleaf		
Rs	Riparian - shrub		



Vegetation from BLM
2009 NAIP Imagery
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.4-4
Vegetation cover types, Broken Wing Ranch
Thompson Creek Mine EIS

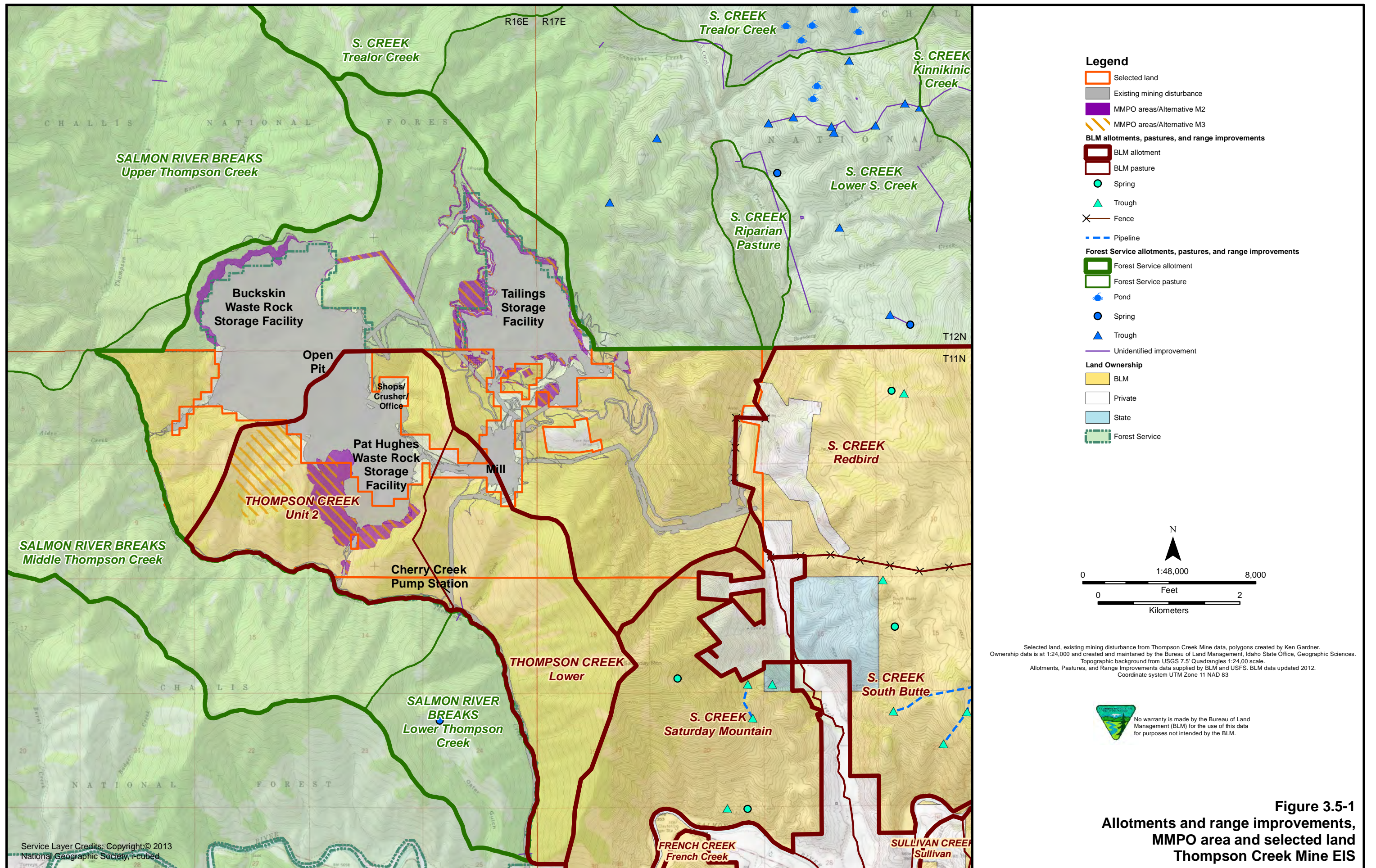
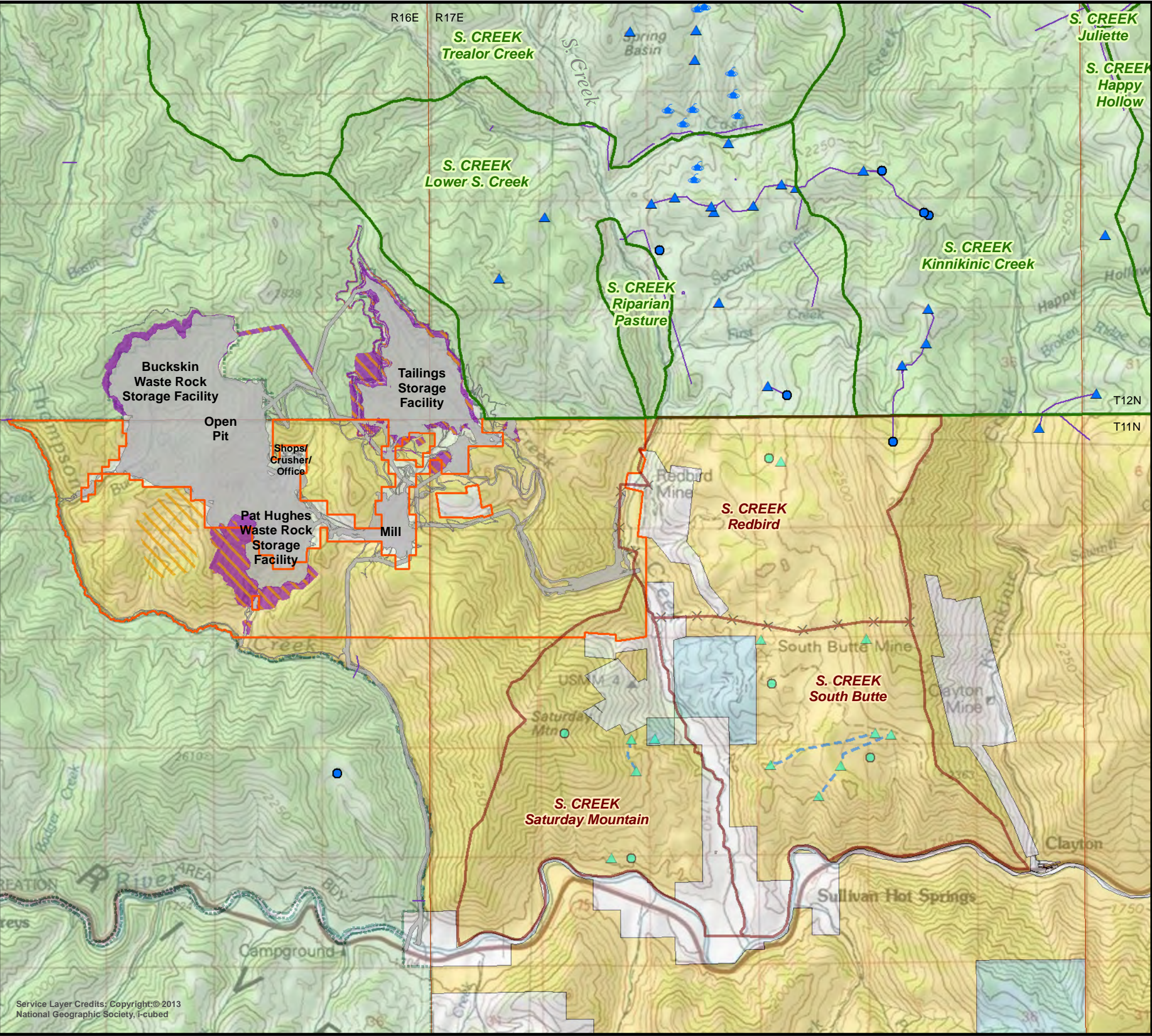


Figure 3.5-1
Allotments and range improvements,
MMPO area and selected land
Thompson Creek Mine EIS

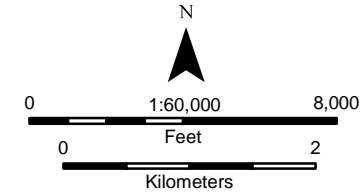


Legend

- Selected land
- Existing mining disturbance
- MMPO areas/Alternative M2
- MMPO areas/Alternative M3
- BLM Pastures and Range Improvements**
- BLM S. Creek Allotment pasture
- Spring
- Trough
- Fence
- Pipeline

Forest Service Pastures and Range Improvements

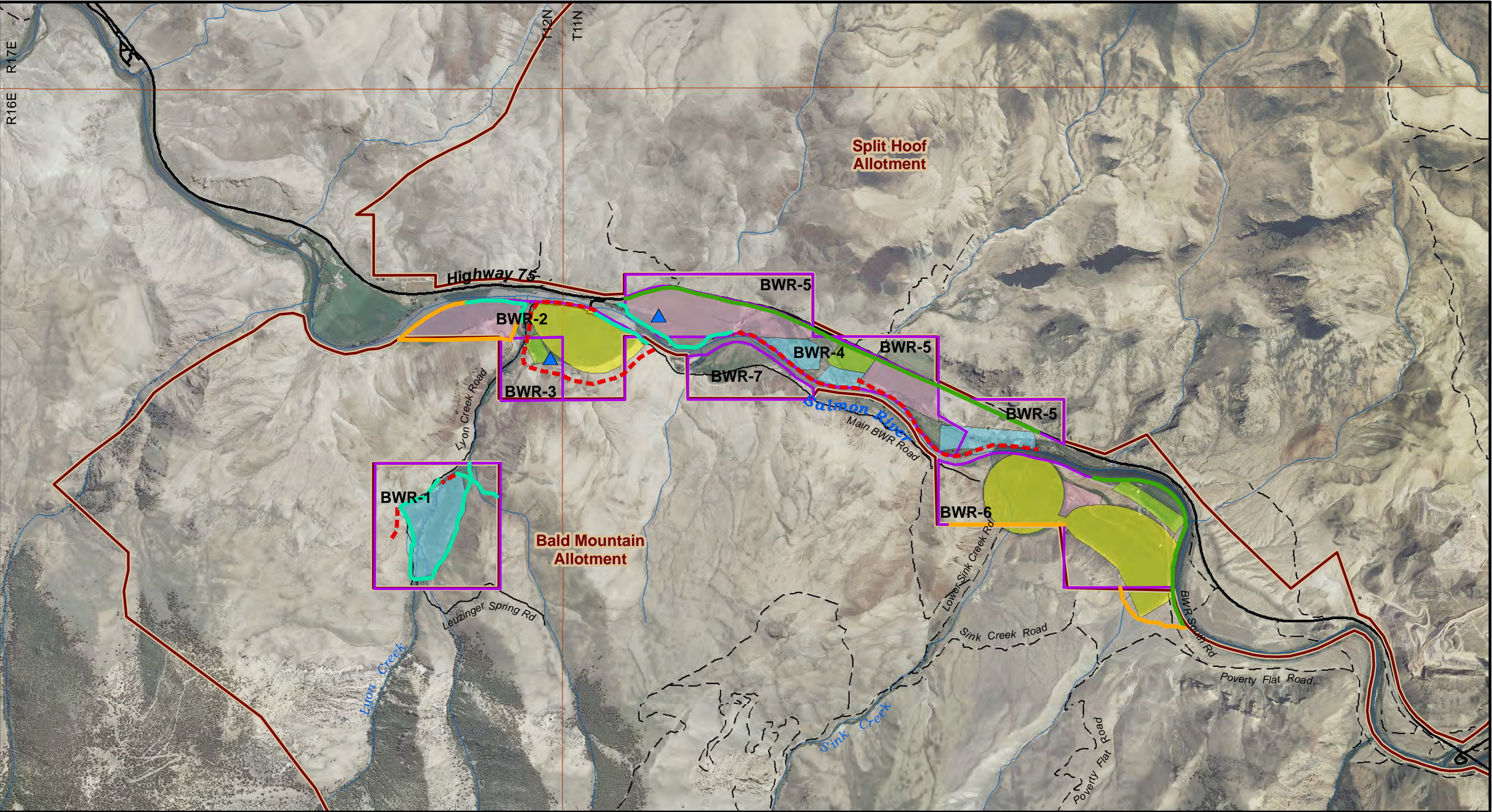
- Forest Service S. Creek Allotment pasture
- Pond
- Spring
- Trough
- Unidentified improvement
- Land Ownership**
- BLM
- Private
- State
- Forest Service



Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,00 scale. Allotments, Pastures, and Range Improvements data supplied by BLM and USFS. Coordinate system UTM Zone 11 NAD 83

No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

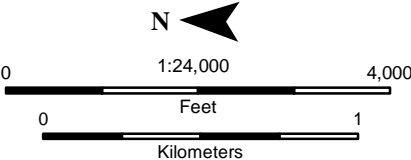
Figure 3.5-2
Range improvements, S. Creek allotment
Thompson Creek Mine EIS



NEPA parcels for the Broken Wing Ranch from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83

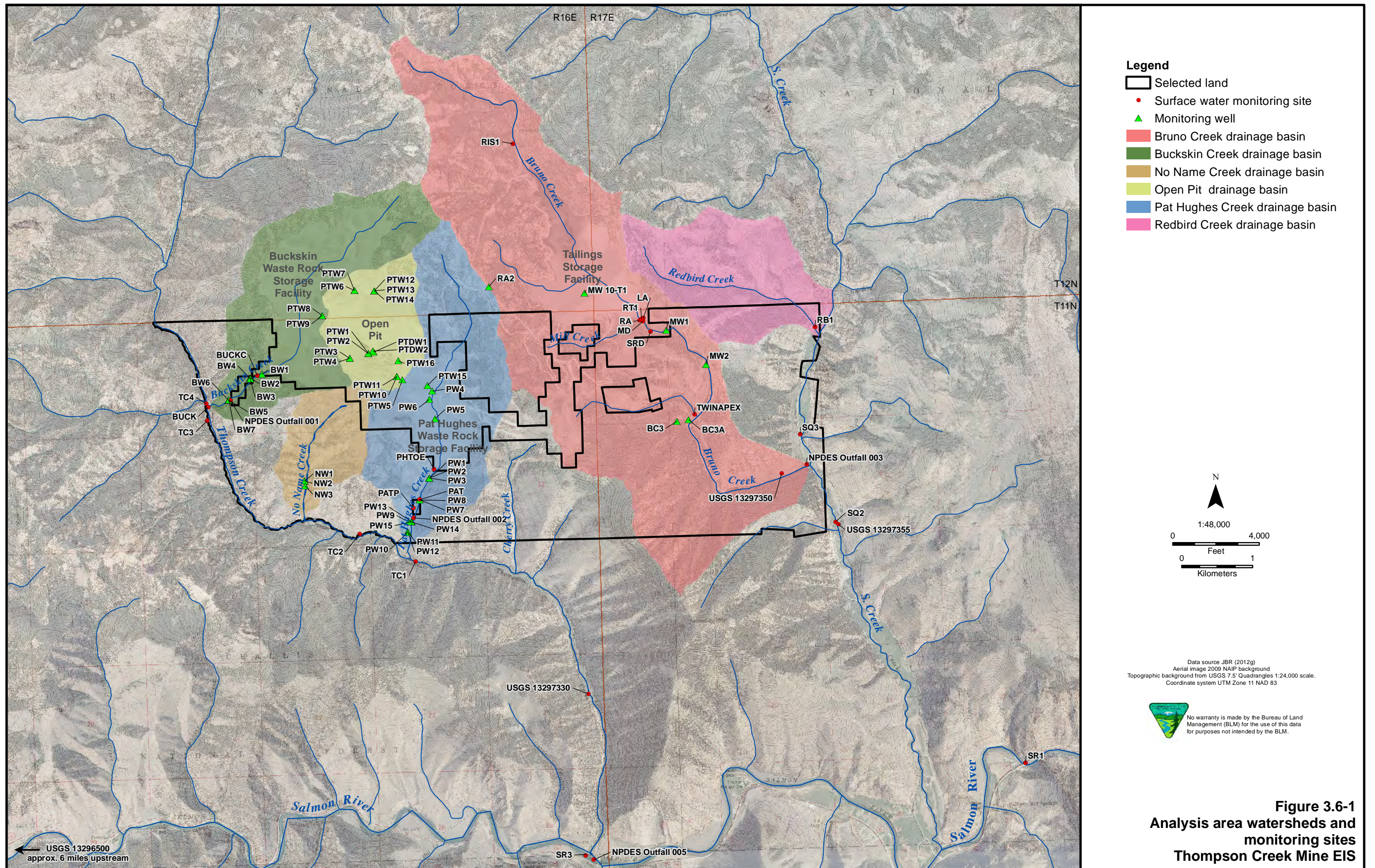
Legend

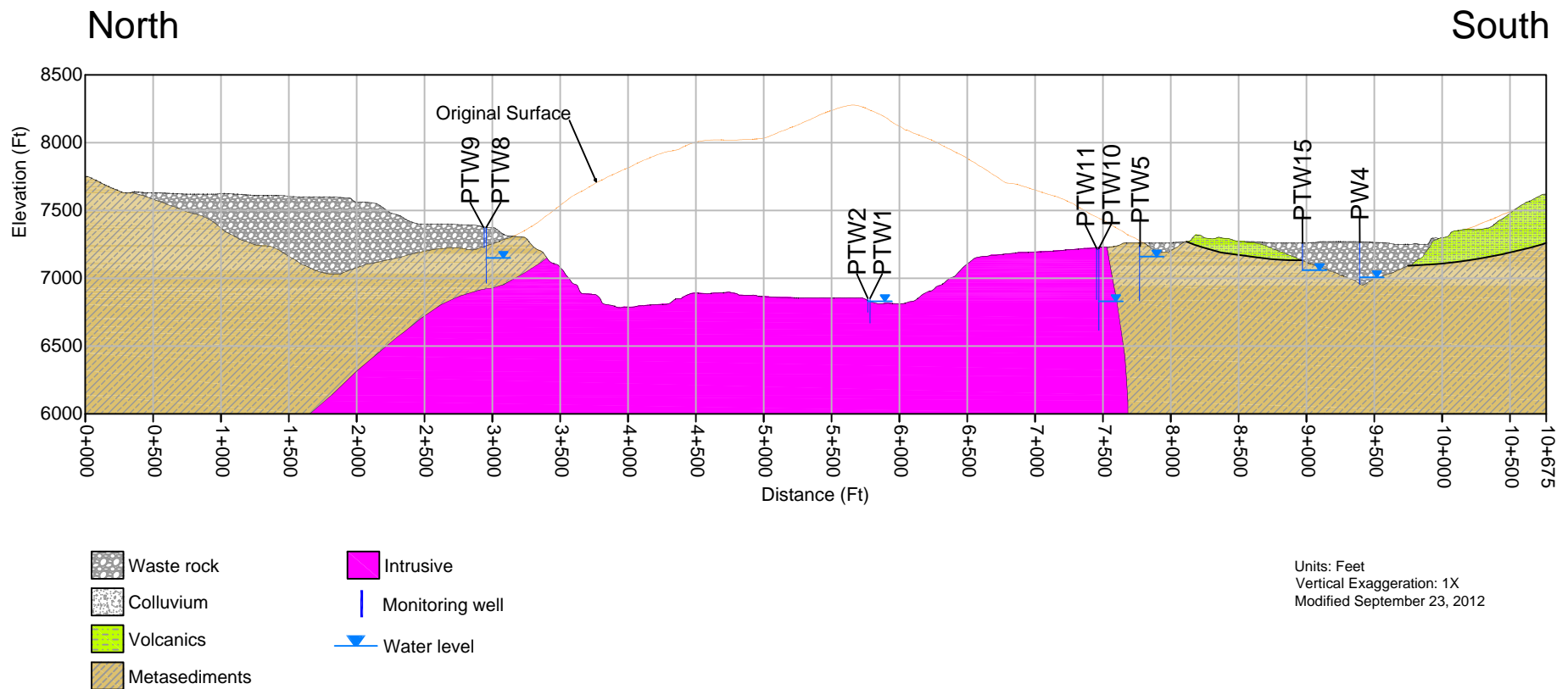
- | | | |
|--------------------------------|---------------|-------------------|
| Broken Wing Ranch NEPA parcels | Trough | Irrigation |
| BLM allotment | Fences | Flood |
| Main Broken Wing Ranch access | Fair | Hard lines |
| 2WD road (Highway 75) | Good | Pivot |
| Primitive road | Poor | Wheel lines |
| Stream | OK | |



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.5-3
Fences and irrigation,
Broken Wing Ranch
Thompson Creek Mine EIS

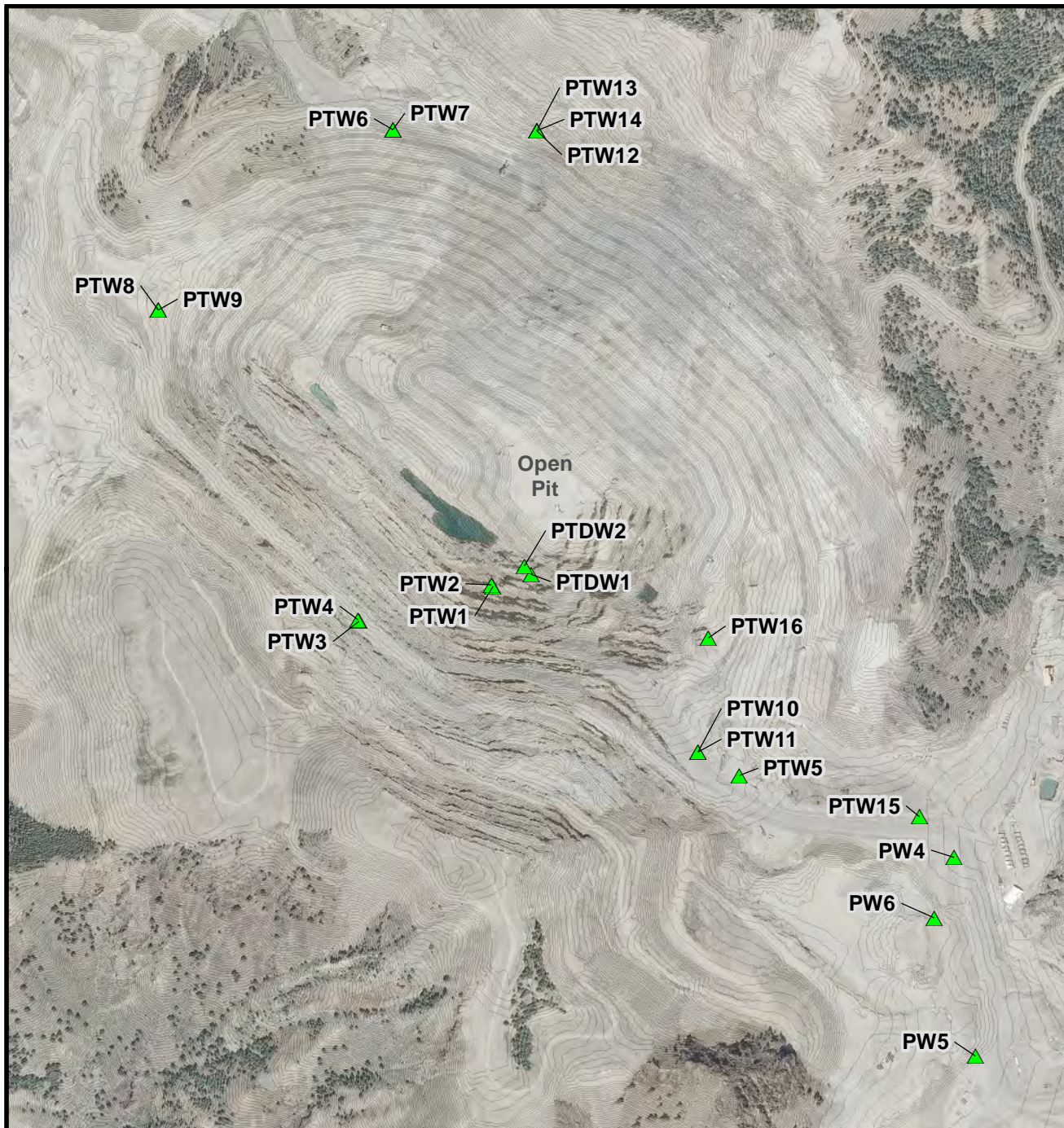




No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

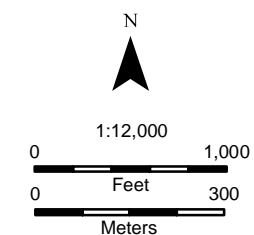
Source: JBR (2012g)

Figure 3.6-10
Open Pit cross-section
Thompson Creek Mine EIS



Legend

▲ Monitoring well



Data source JBR (2012g)
Aerial image 2009 NAIP background
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.6-11
Open pit plan view
Thompson Creek Mine EIS

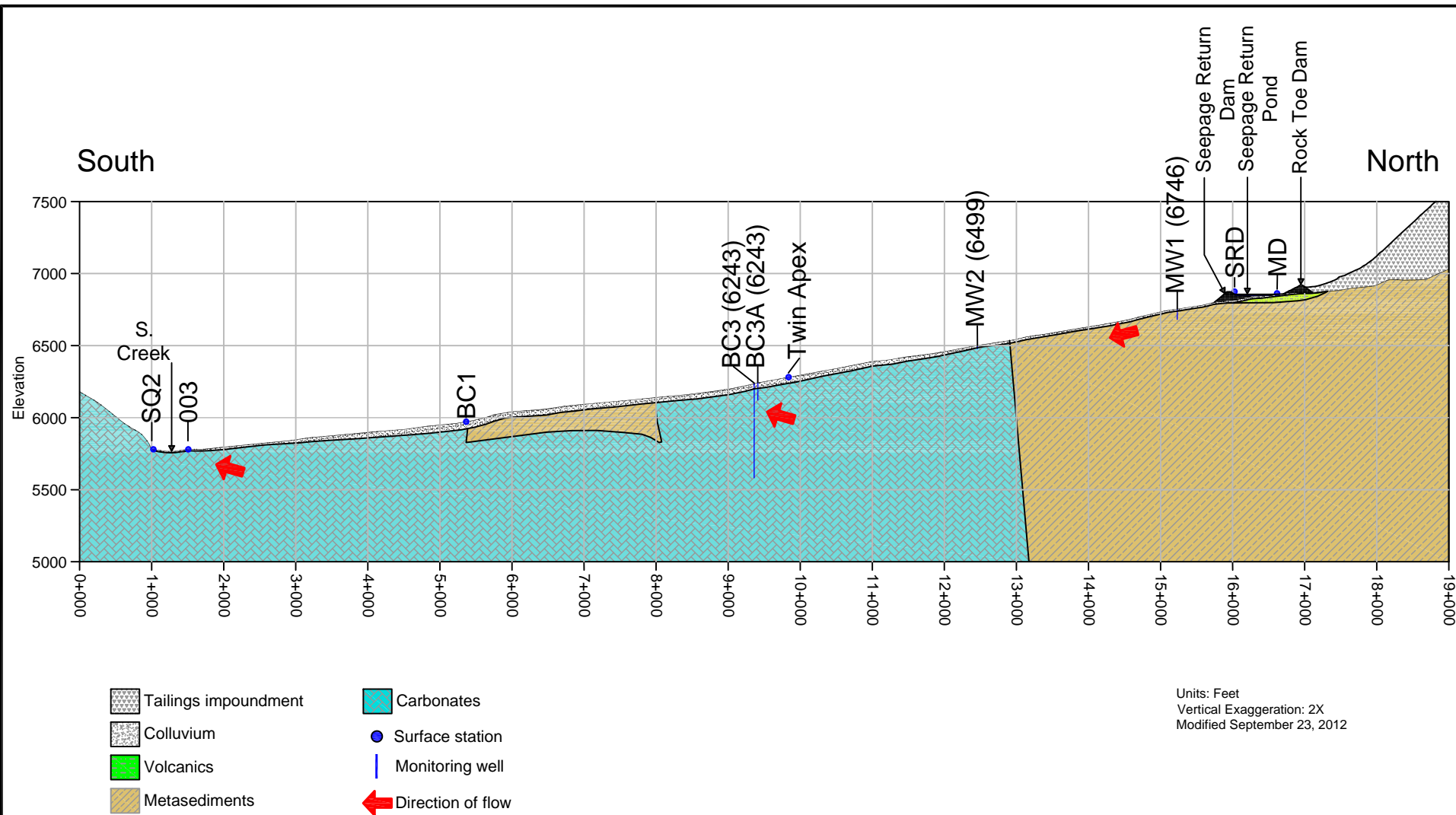
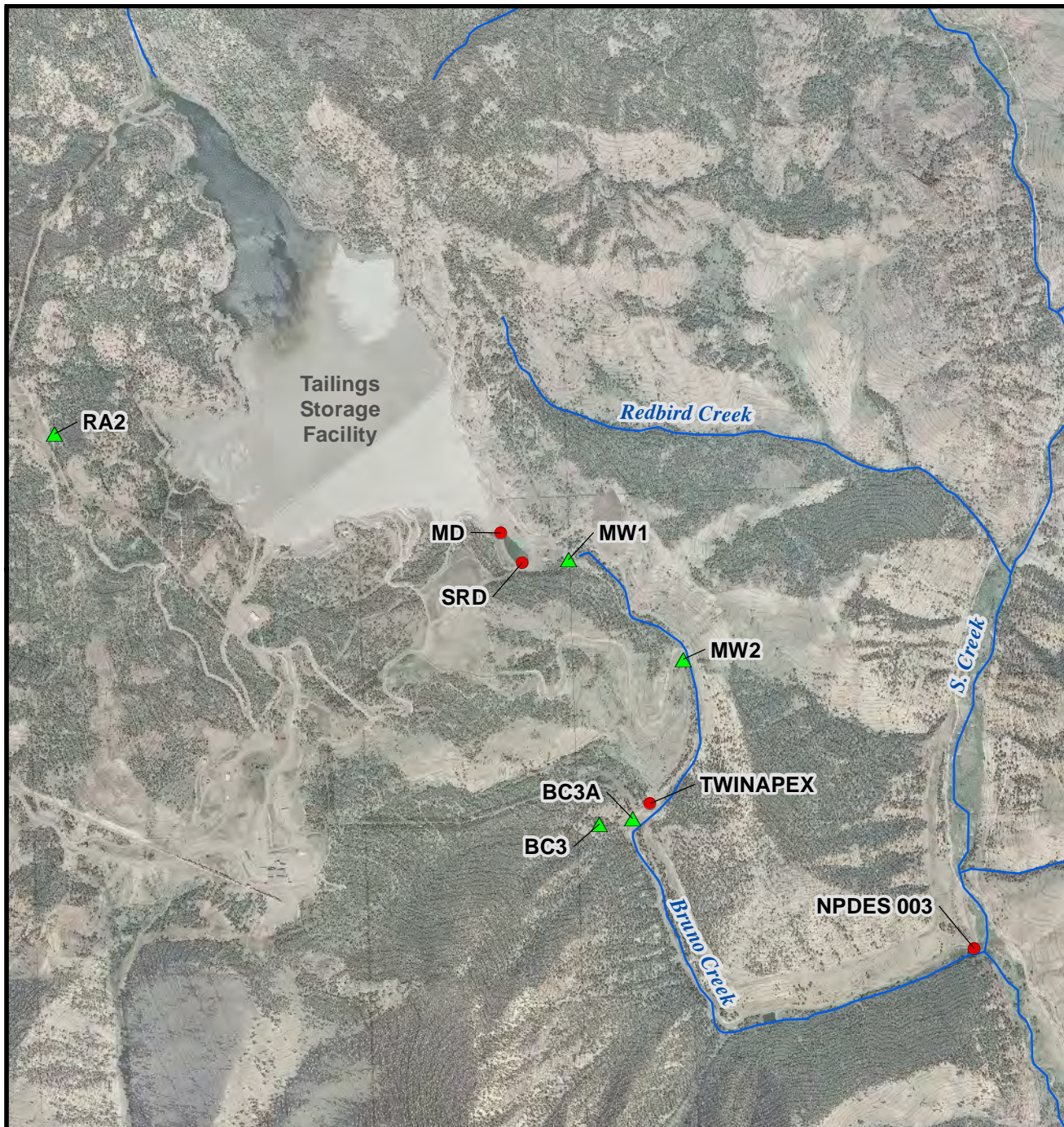
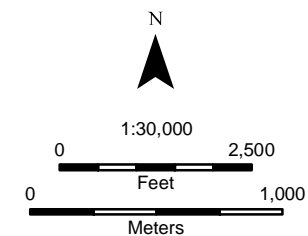


Figure 3.6-12
Lower Bruno Creek drainage cross-section
Thompson Creek Mine EIS



Legend

- ▲ Monitoring well
- Surface water monitoring site

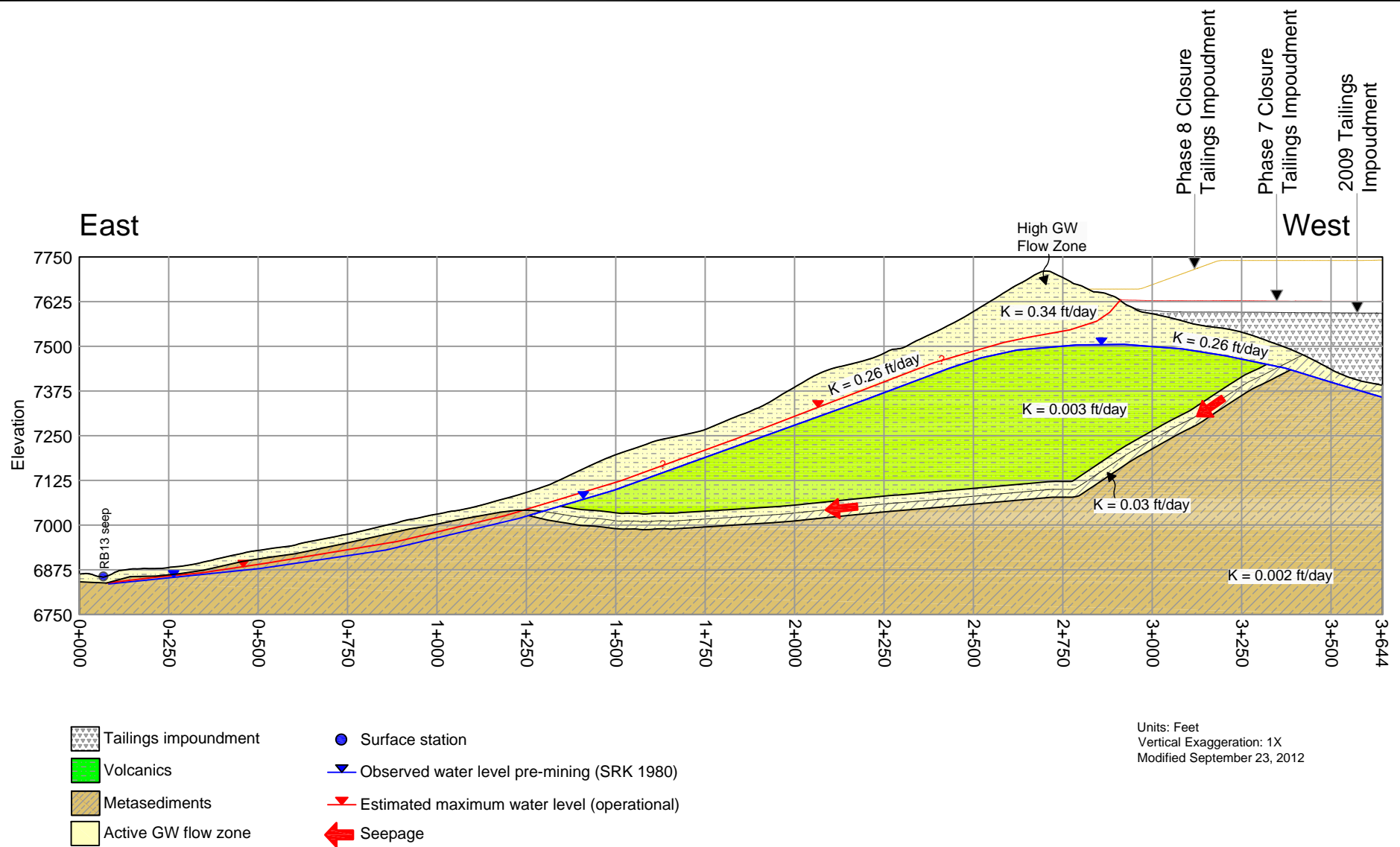


Data source JBR (2012g)
 Aerial image 2009 NAIP background
 Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83



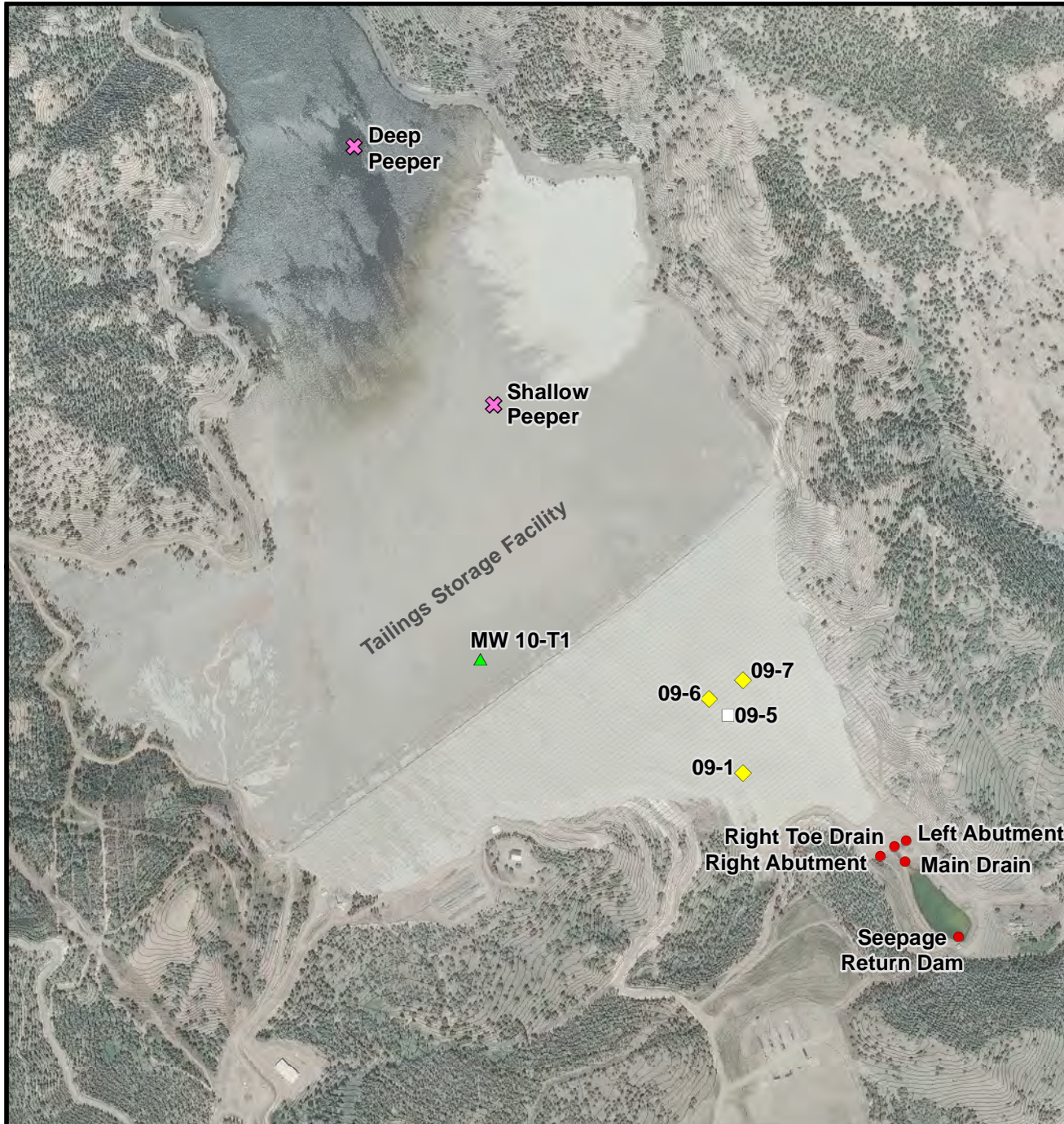
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.6-13
Bruno Creek drainage plan view
Thompson Creek Mine EIS



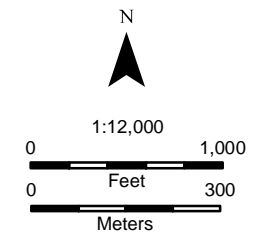
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.6-14
Flowpath from TSF to
Redbird Creek drainage
Thompson Creek Mine EIS



Legend

- ✕ Peeper sites
- Piezometer
- ◆ Piezometer and borehole
- Surface water monitoring site
- ▲ Monitoring well

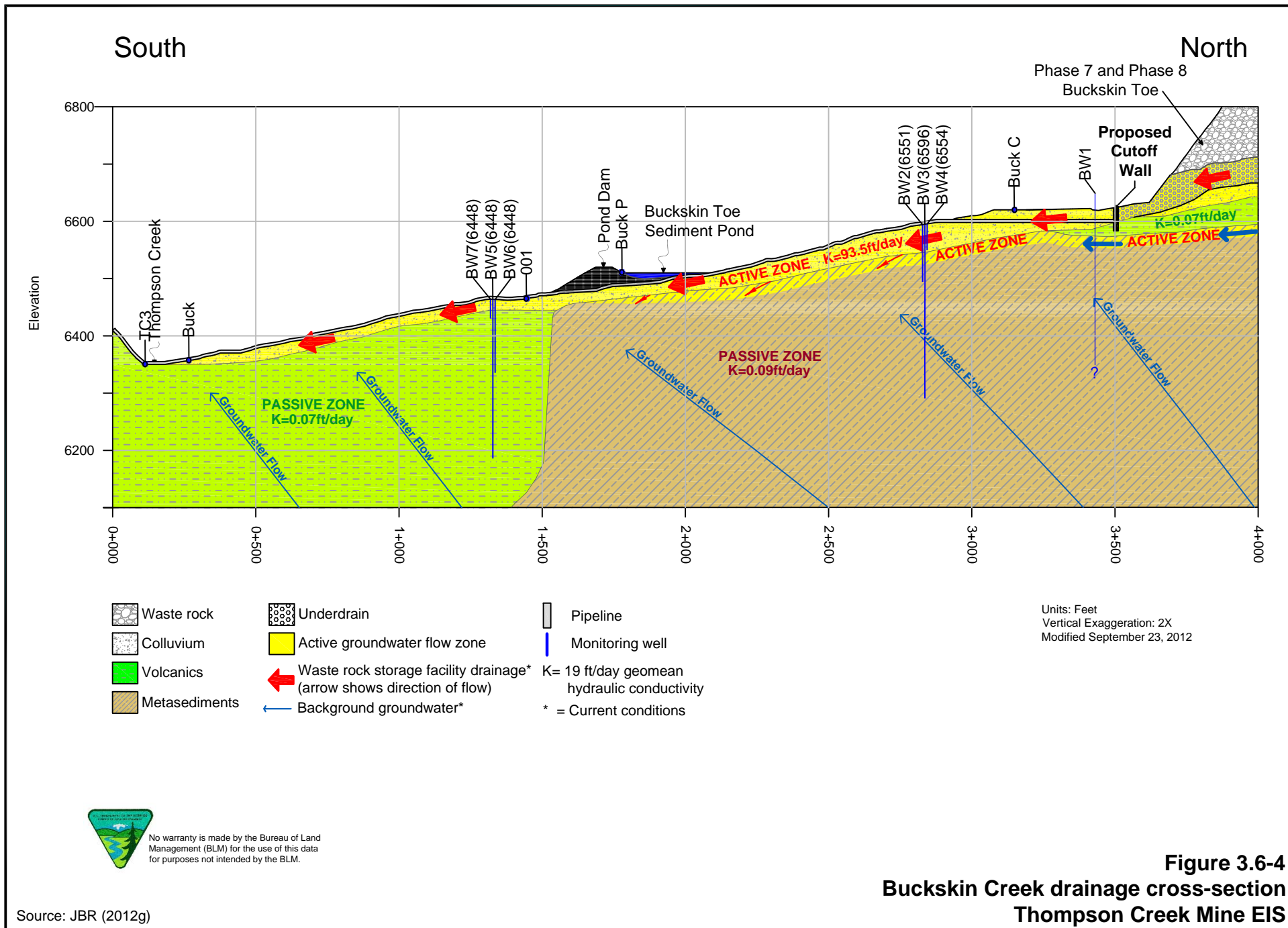


Data source JBR (2012g)
 Aerial image 2009 NAIP background
 Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83

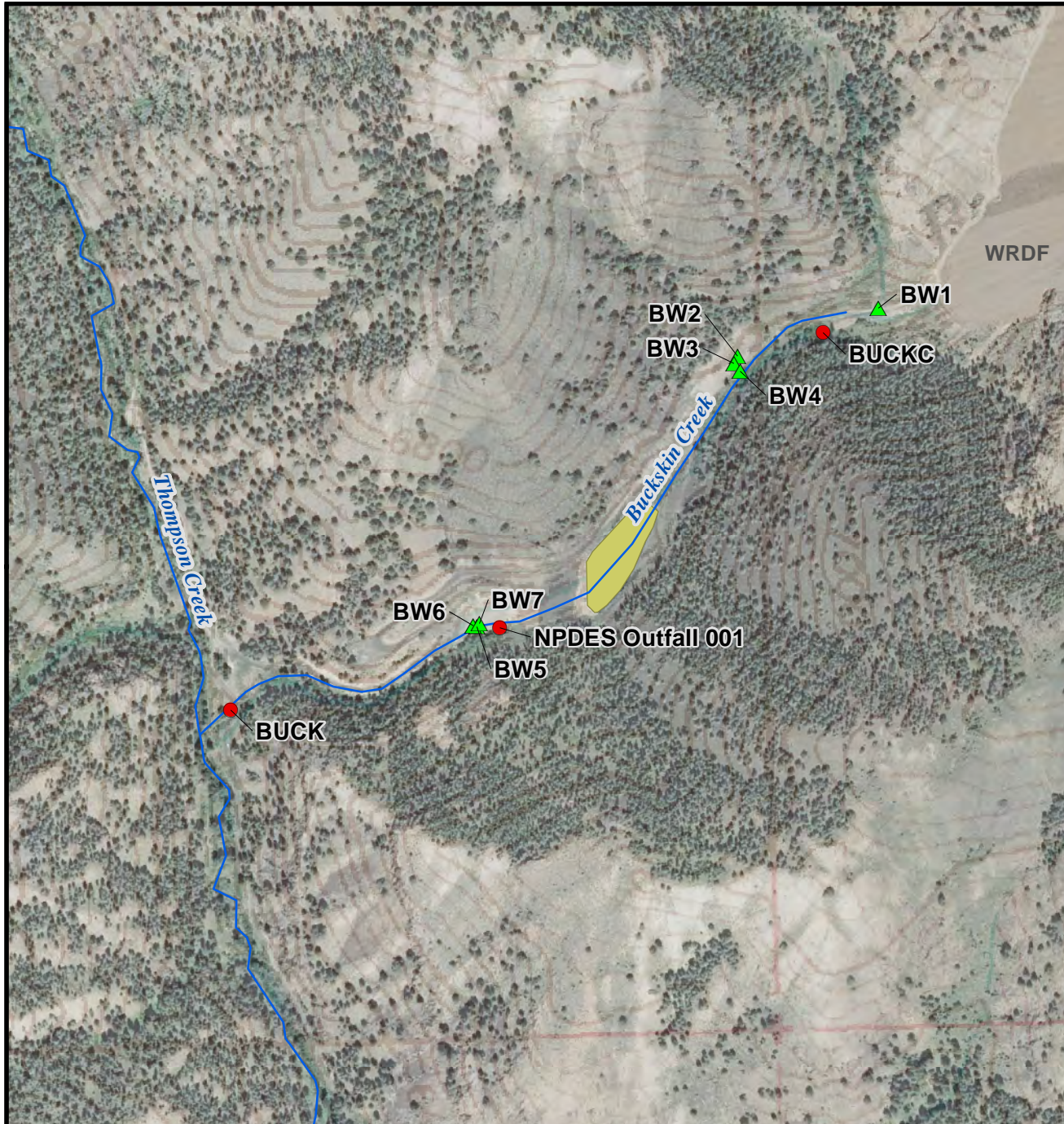


No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.6-15
TSF, water quality
monitoring locations
Thompson Creek Mine EIS

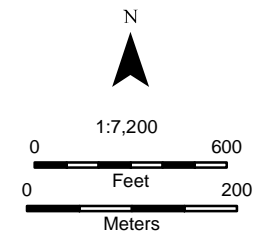


Source: JBR (2012g)



Legend

- ▲ Monitoring well
- Surface water monitoring site
- Sedimentation pond



Data source JBR (2012g)
 Aerial image 2009 NAIP background
 Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.6-5
Buckskin Creek drainage plan view
Thompson Creek Mine EIS

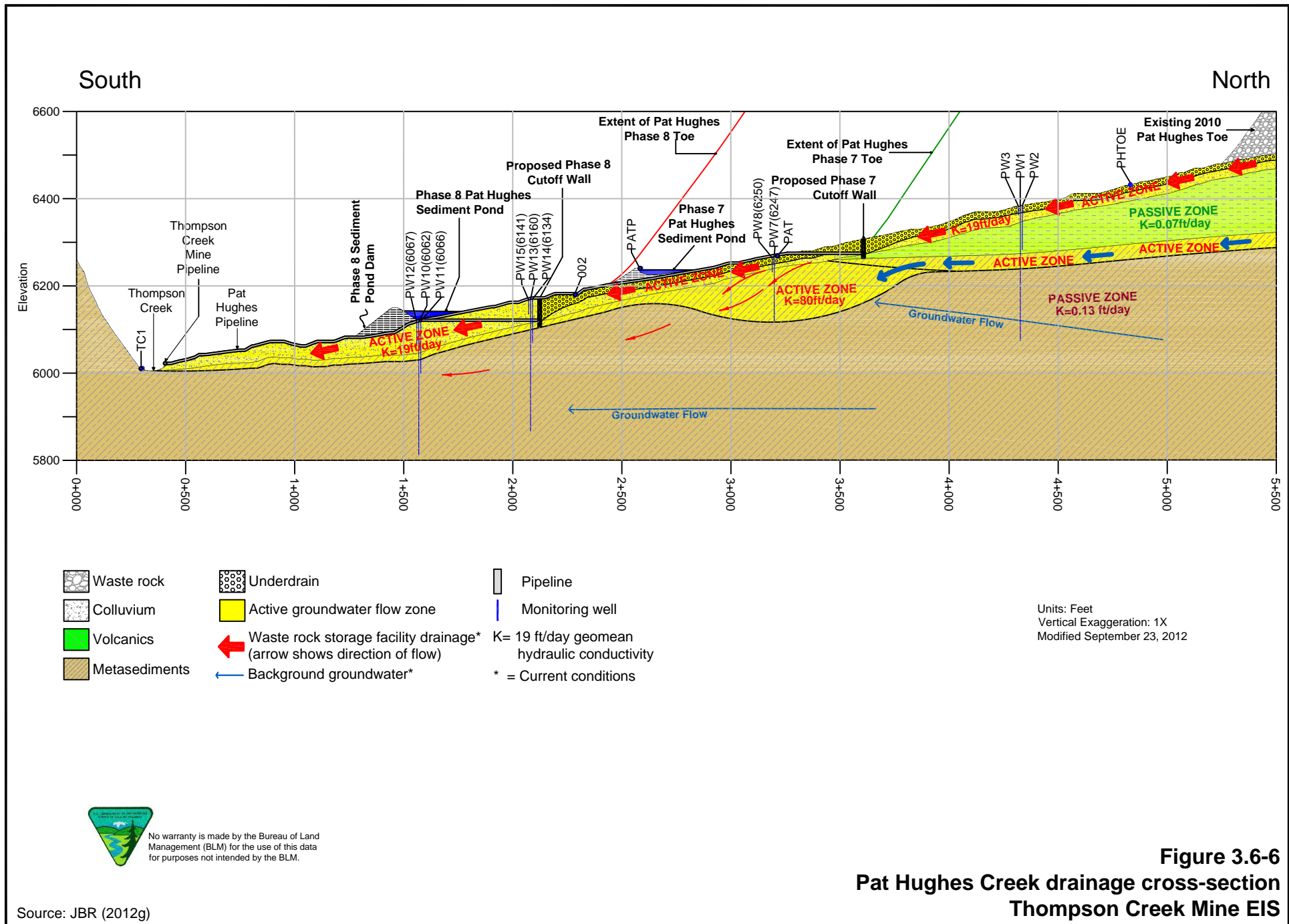
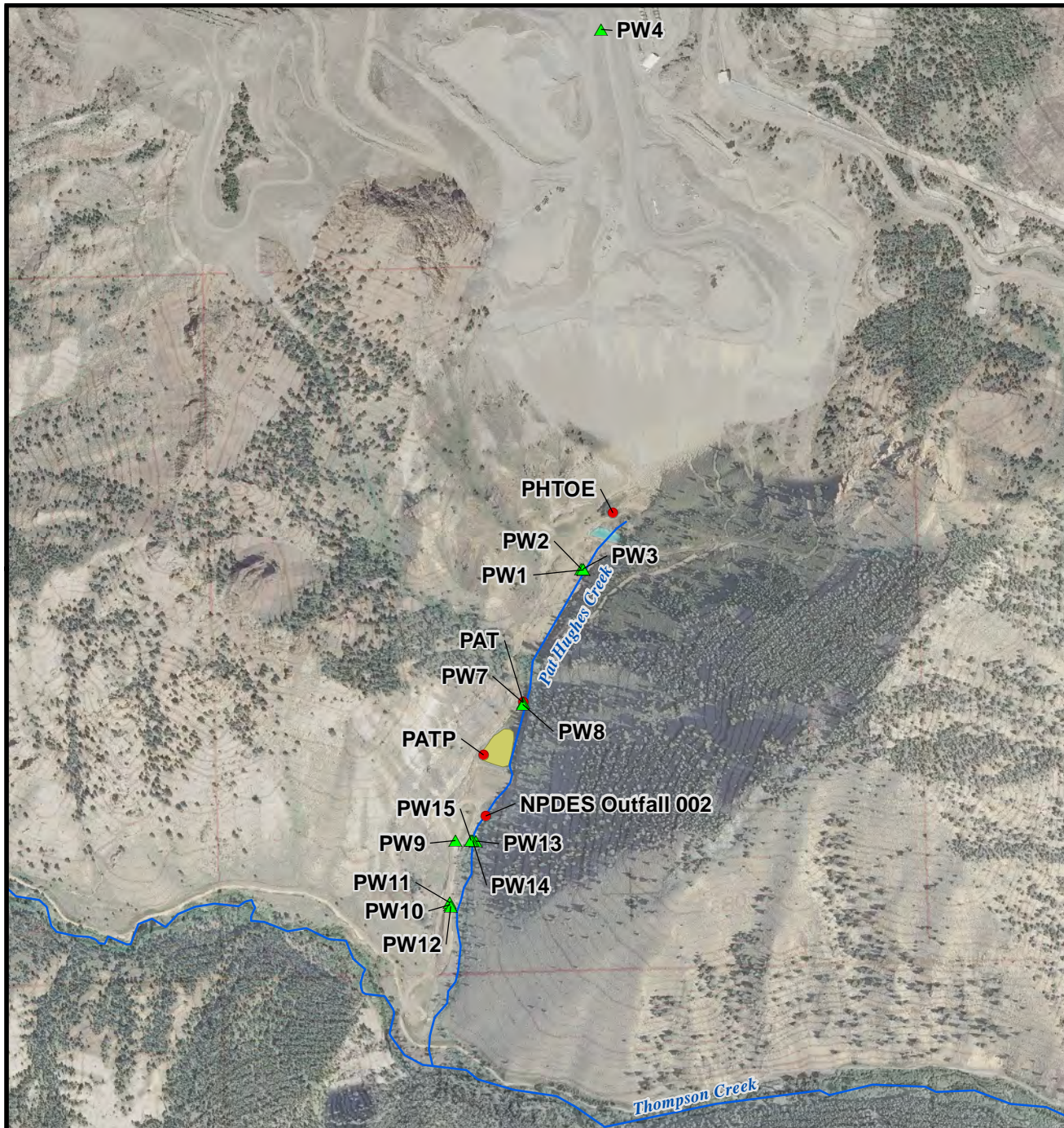
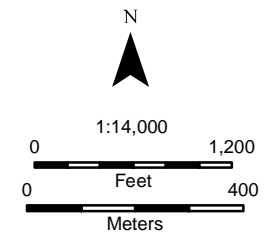


Figure 3.6-6
Pat Hughes Creek drainage cross-section
Thompson Creek Mine EIS



Legend

- ▲ Monitoring well
- Surface water monitoring site
- Sedimentation pond

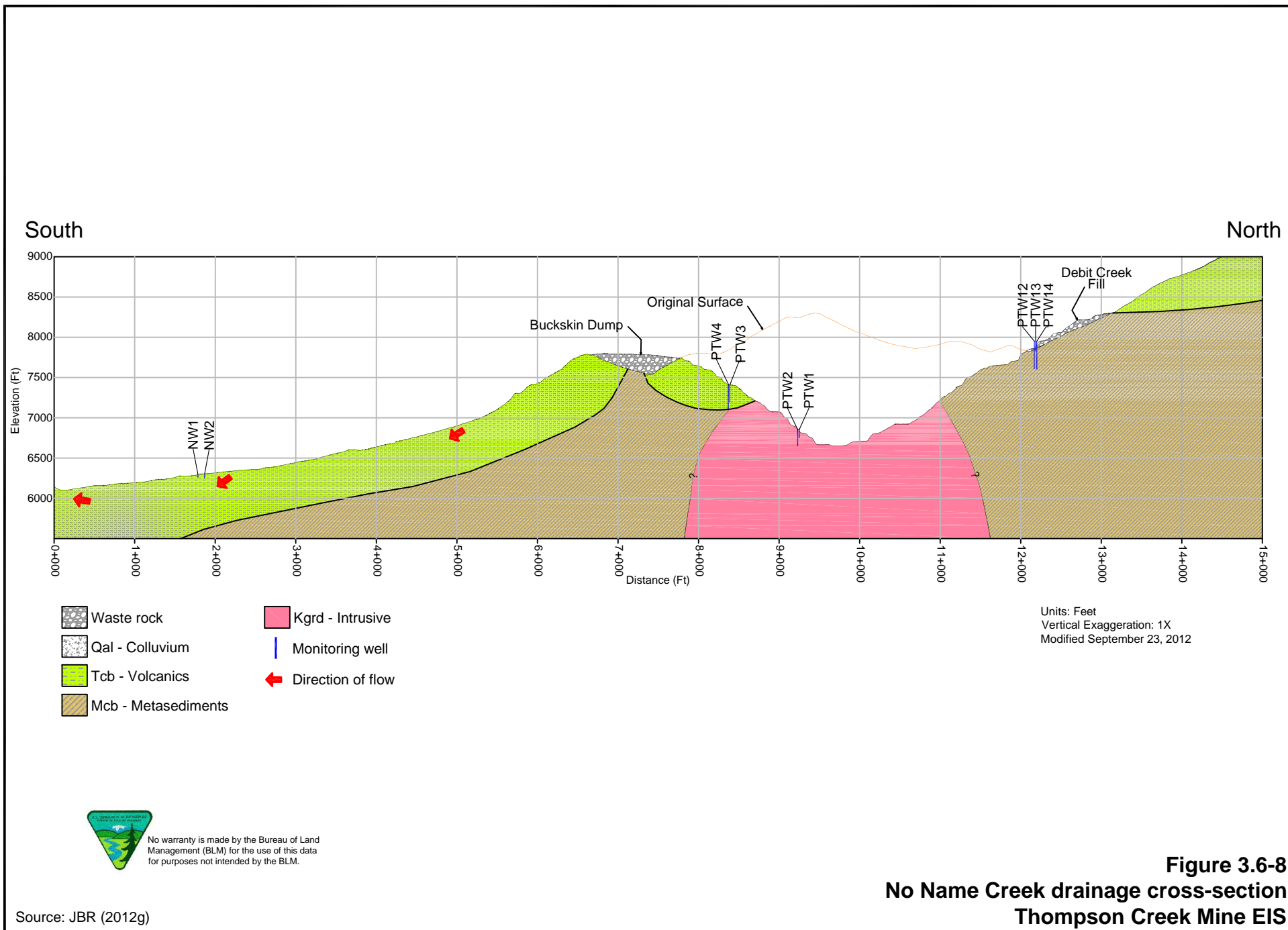


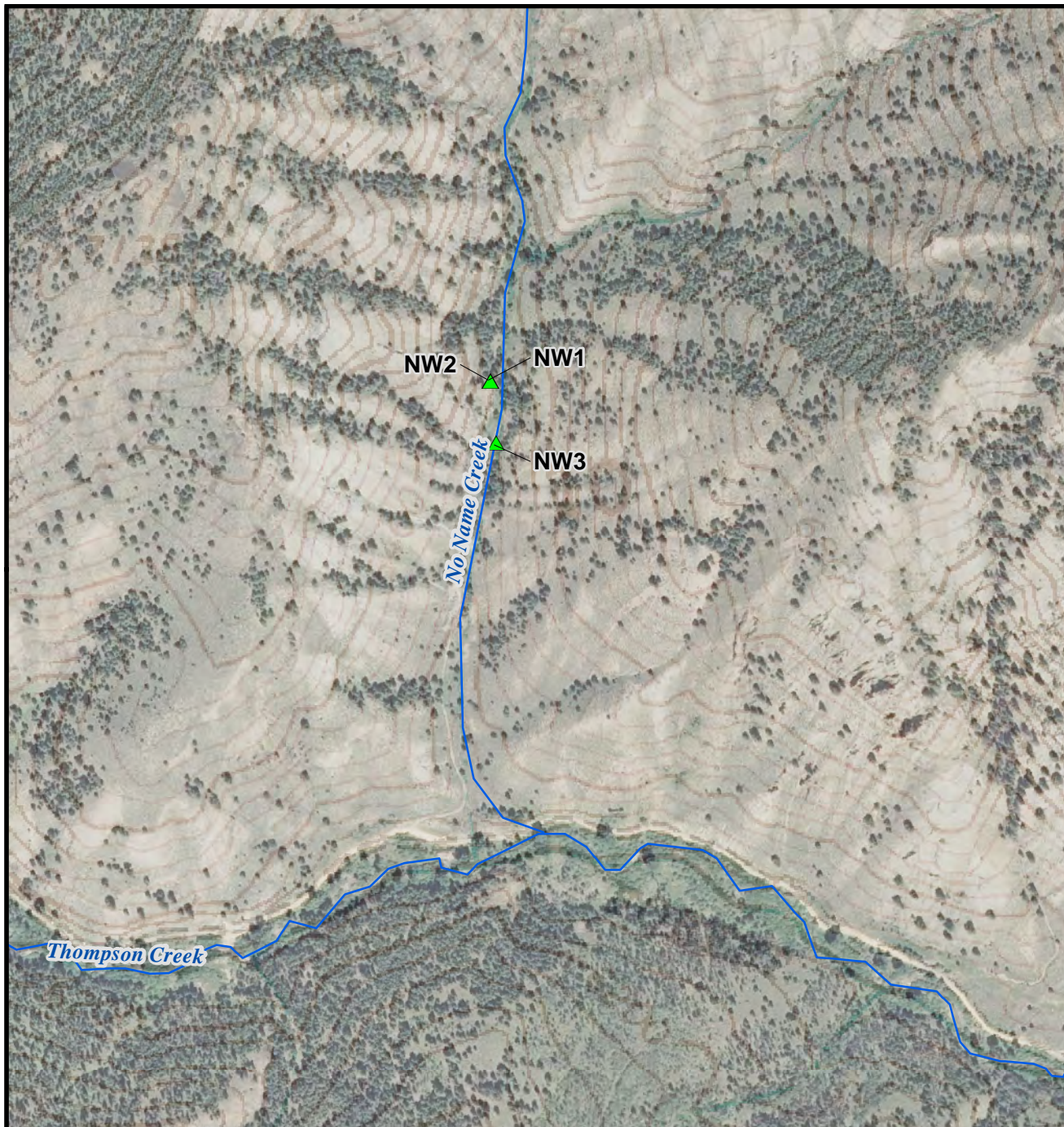
Data source JBR (2012g)
 Aerial image 2009 NAIP background
 Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

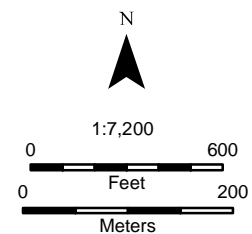
Figure 3.6-7
Pat Hughes Creek drainage plan view
Thompson Creek Mine EIS





Legend

▲ Monitoring well

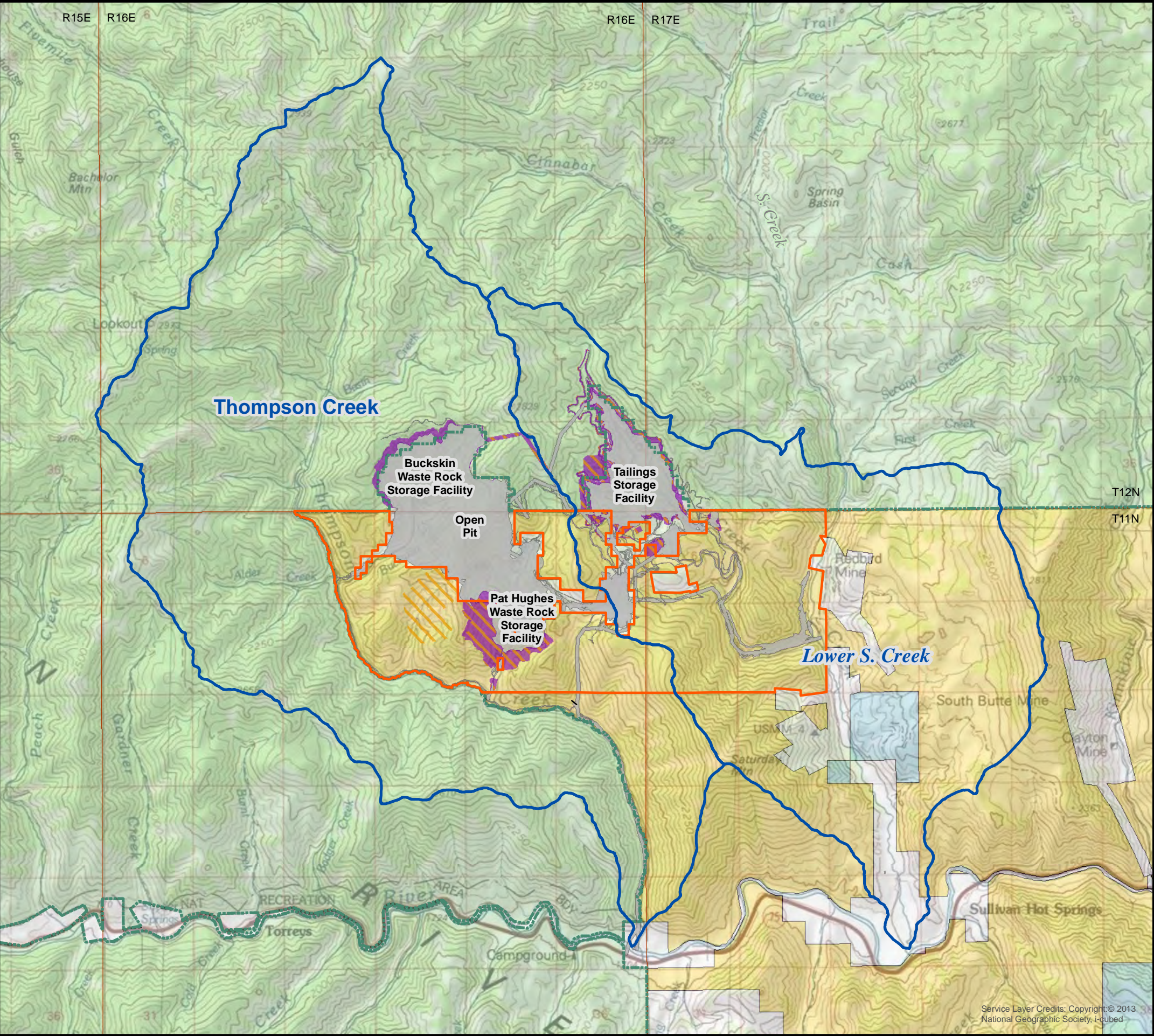


Data source JBR (2012g)
Aerial image 2009 NAIP background
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.6-9
No Name Creek drainage plan view
Thompson Creek Mine EIS



Legend

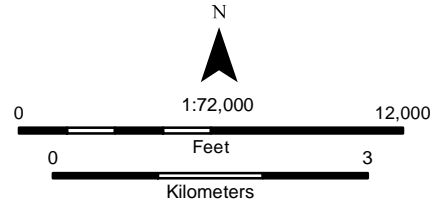
- Selected land
- Existing mining disturbance
- MMPO areas/Alternative M2
- MMPO areas/Alternative M3

HUC 12 Boundaries

- Lower S. Creek
- Thompson Creek

Land Ownership

- BLM
- Private
- State
- Forest Service

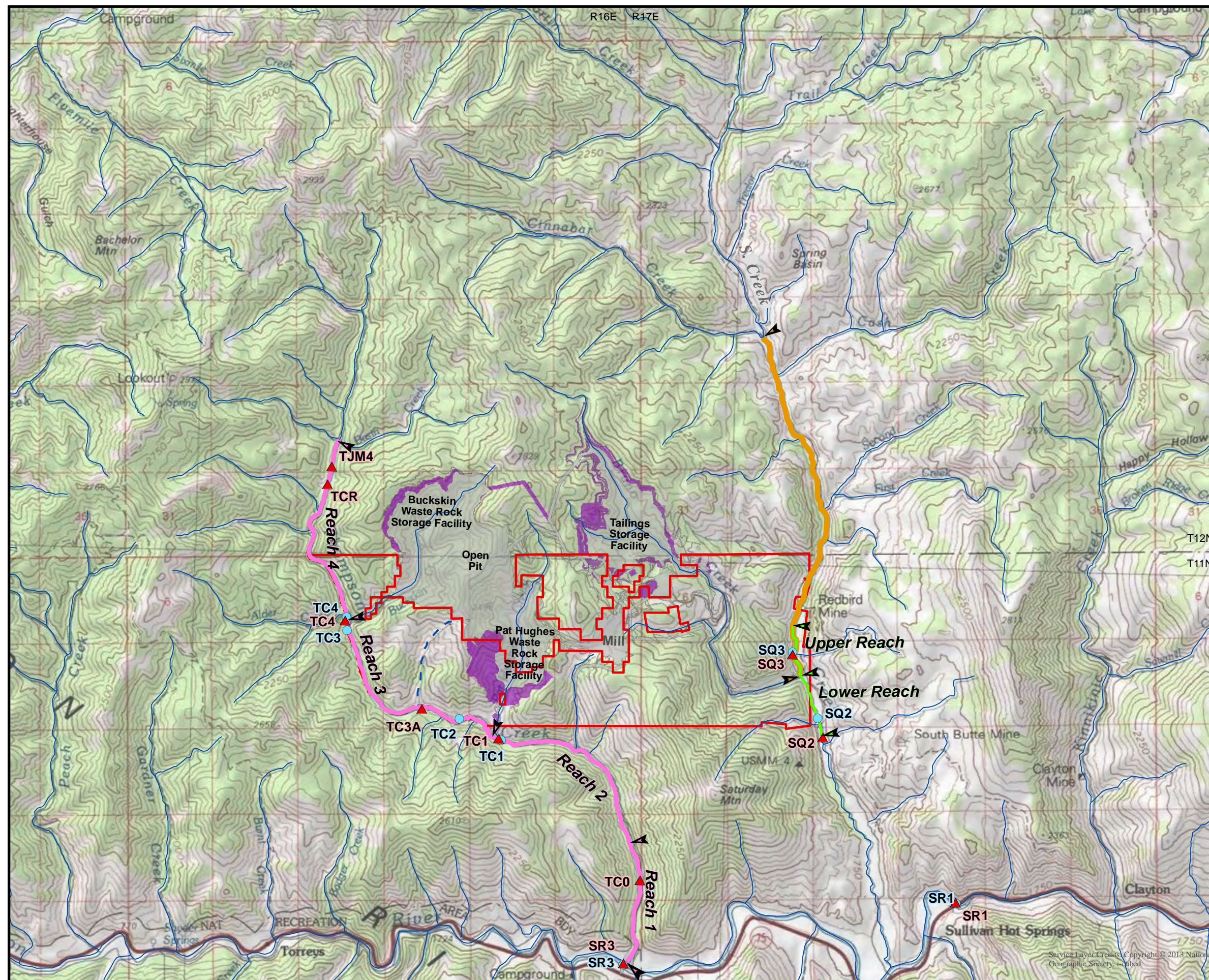


Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Background from USGS 1:100,000-scale metric topographic maps
HUC boundaries from USDA/NRCS - National Geospatial Management center, 2012



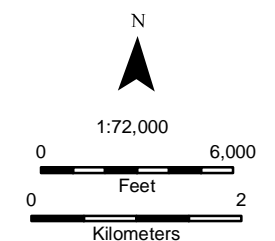
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.7-1
MMPO alternative analysis area, wildlife resources
Thompson Creek Mine EIS



Legend

- Existing mining disturbance
- MMPO areas/Alternative M2
- Selected land
- Biological monitoring sites
- Water quality monitoring sites
- IDFG Transect start locations
- 1992 Forest Service R1/R4 survey
- 2002 Forest Service R1/R4 surveys reaches
- 2009 TCMC R1/R4 surveys reaches

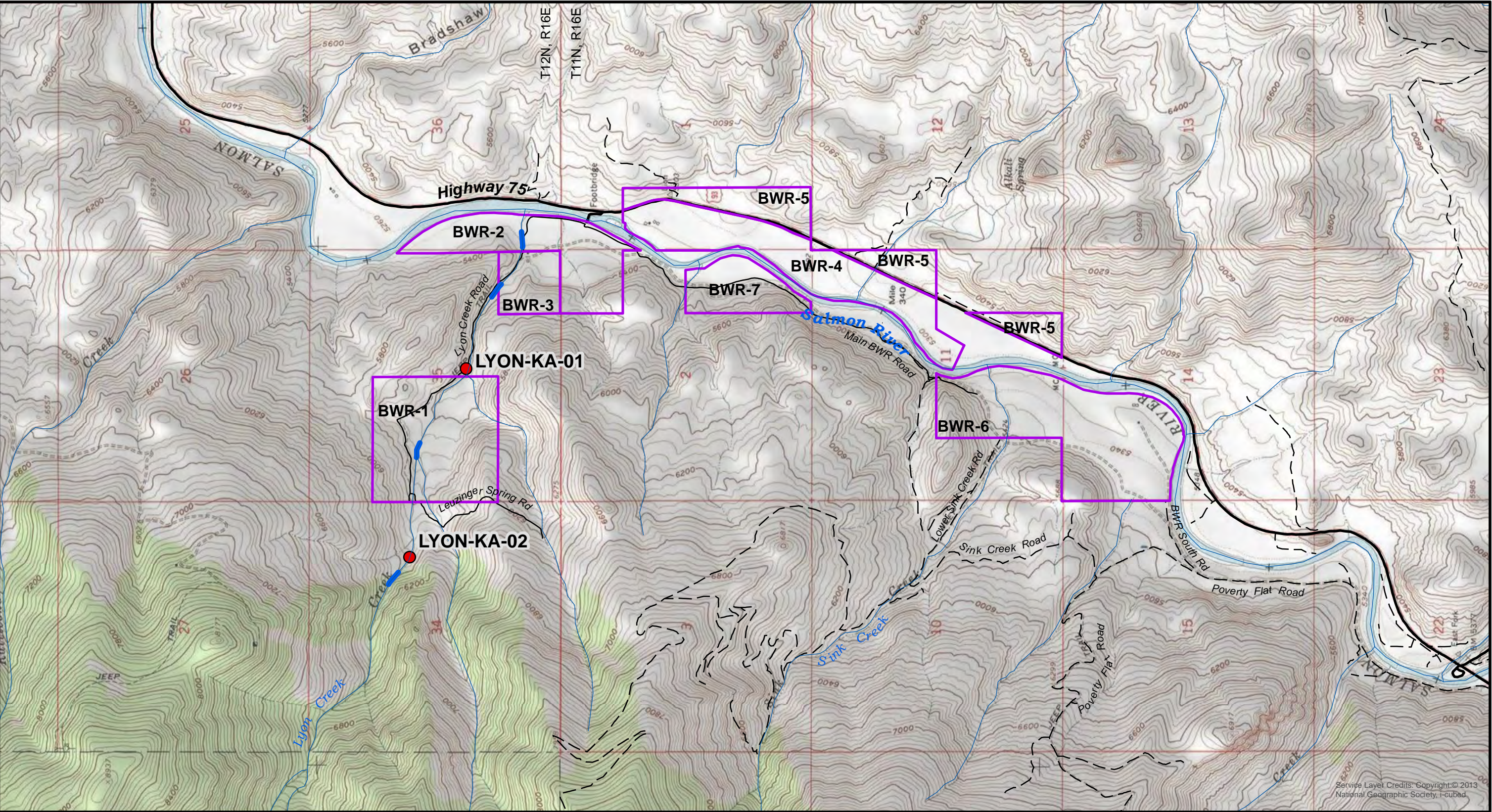


Data source Lorax 2011e
Aerial image 2009 NAIP background
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Water quality and biological monitoring sites from TCM
Reach surveys from TCM and Forest Service
IDFG Transects from unpublished reports from Idaho Department of Fish and Game
Coordinate system UTM Zone 11 NAD 83



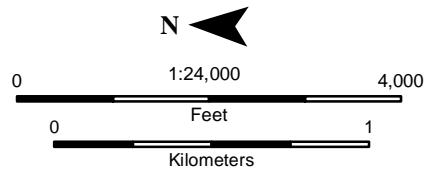
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.8-1
Survey and monitoring locations,
MMPO area and selected land
Thompson Creek Mine EIS



Legend

- Broken Wing Ranch
- Main Broken Wing Ranch access
- 2WD road (Highway 75)
- Primitive road
- Stream
- BLM temperature monitoring sites (2010-2011)
- Lyon Creek sample reaches

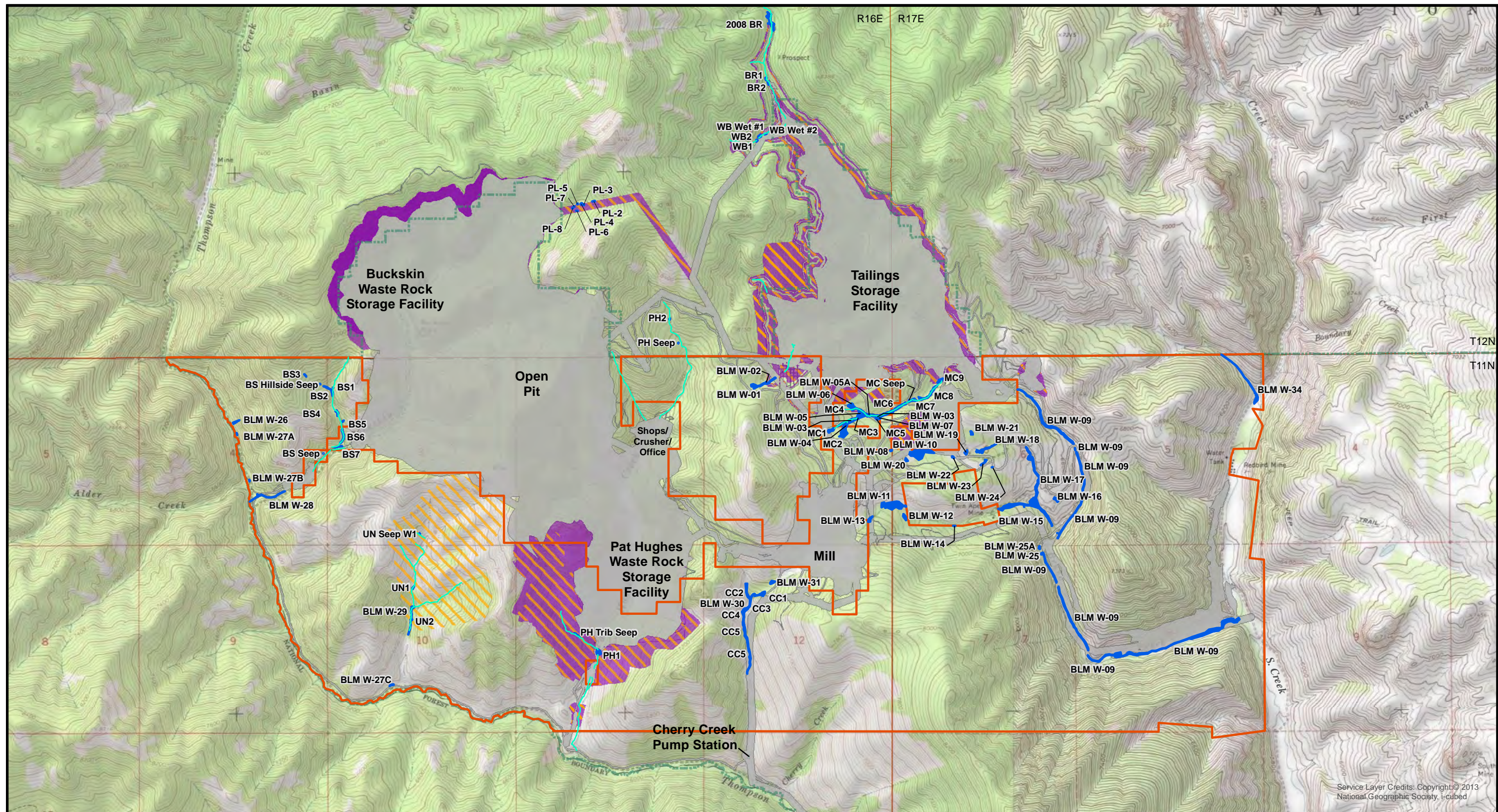


NEPA parcels for the Broken Wing Ranch from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
Temperature monitoring sites and Lyon Creek sample reaches from BLM and IDFG
Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.8-2
Survey and monitoring locations,
Broken Wing Ranch
Thompson Creek Mine EIS



Legend

- Selected land
- Existing mining disturbance
- MMPO areas/Alternative M2
- MMPO areas/Alternative M3

- Wetlands
- Surveyed stream segments

Land Ownership

- BLM
- Private
- State
- Forest Service

Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
 Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
 Wetland Data from JBR (HDR) 2008 and 2009
 Topographic background from USGS 7.5' Quadrangles 1:24,00 scale.
 Coordinate system UTM Zone 11 NAD 83

N

0 1:32,000 1

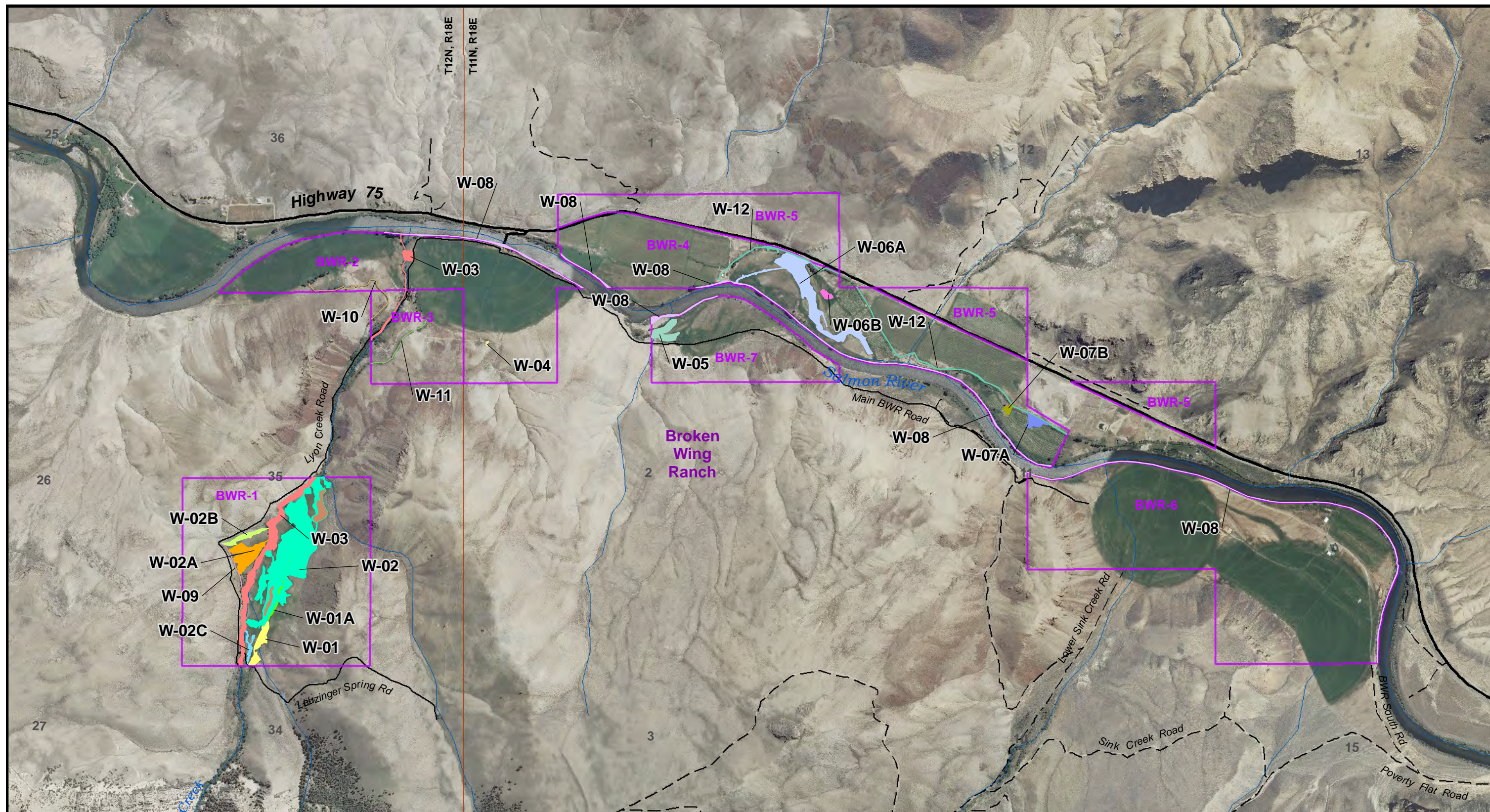
0 Miles 1

0 Kilometers 1

No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.9-1

Wetlands and streams, MMPO area and selected land Thompson Creek Mine EIS

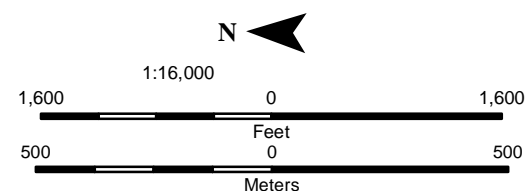


Legend

- Offered lands
- Main Broken Wing Ranch access
- 2WD road (Highway 75)
- Primitive road
- Stream

Wetlands

- | | | | |
|----------|----------|----------|---------|
| BW W-01 | BW W-02B | BW W-06A | BW W-09 |
| BW W-01A | BW W-02C | BW W-06B | BW W-10 |
| BW W-02 | BW W-03 | BW W-07A | BW W-11 |
| BW W-02A | BW W-04 | BW W-07B | BW W-12 |
| | BW W-05 | BW W-08 | UPLAND |

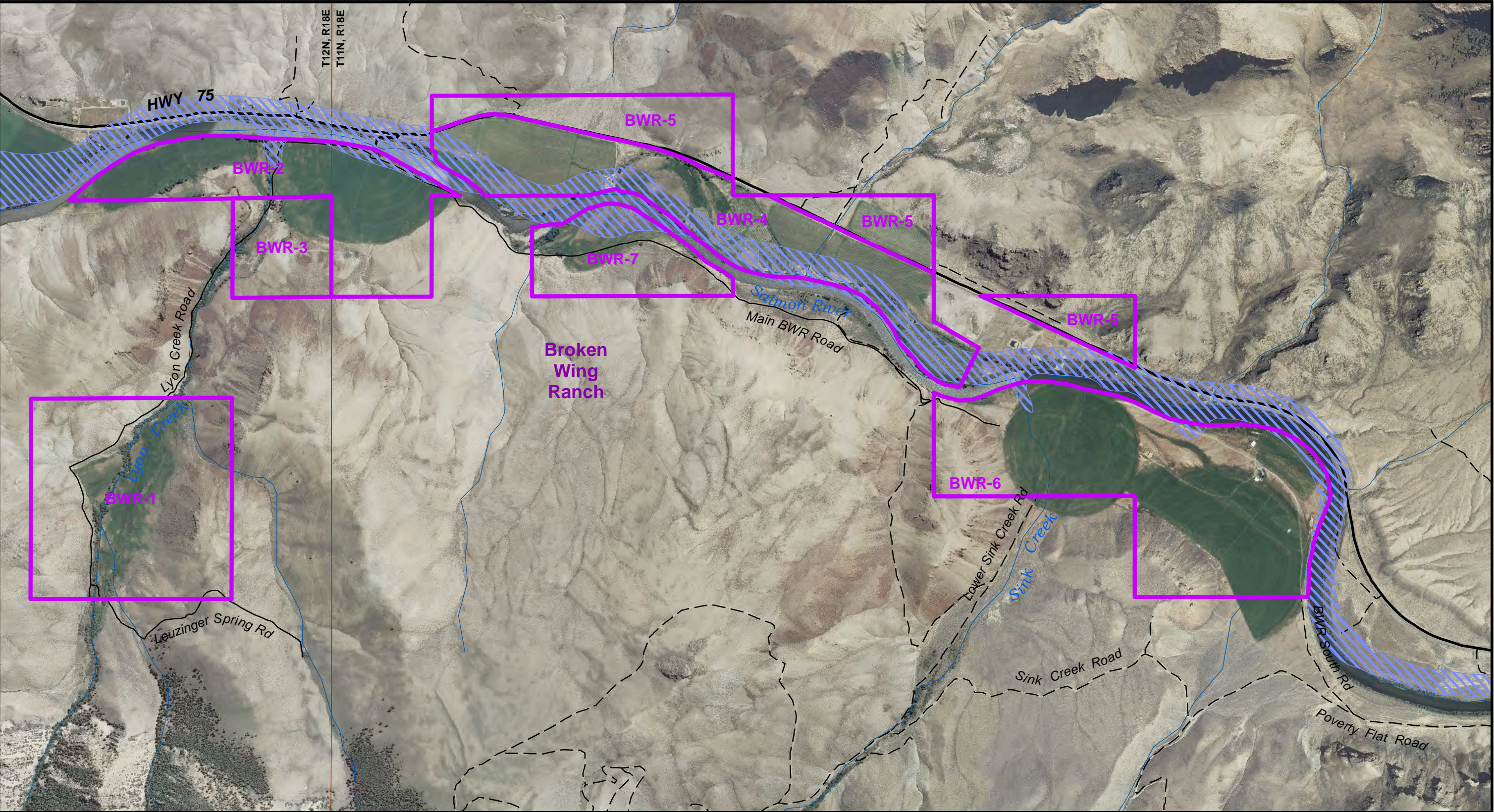


Wetland data from Atkins 2010
2009 NAIP Imagery
Coordinate system UTM Zone 11 NAD 83



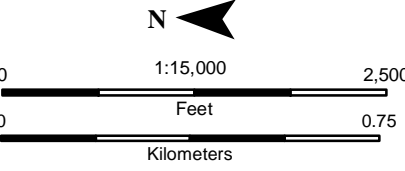
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.9-2
Wetlands, Broken Wing Ranch
Thompson Creek Mine EIS



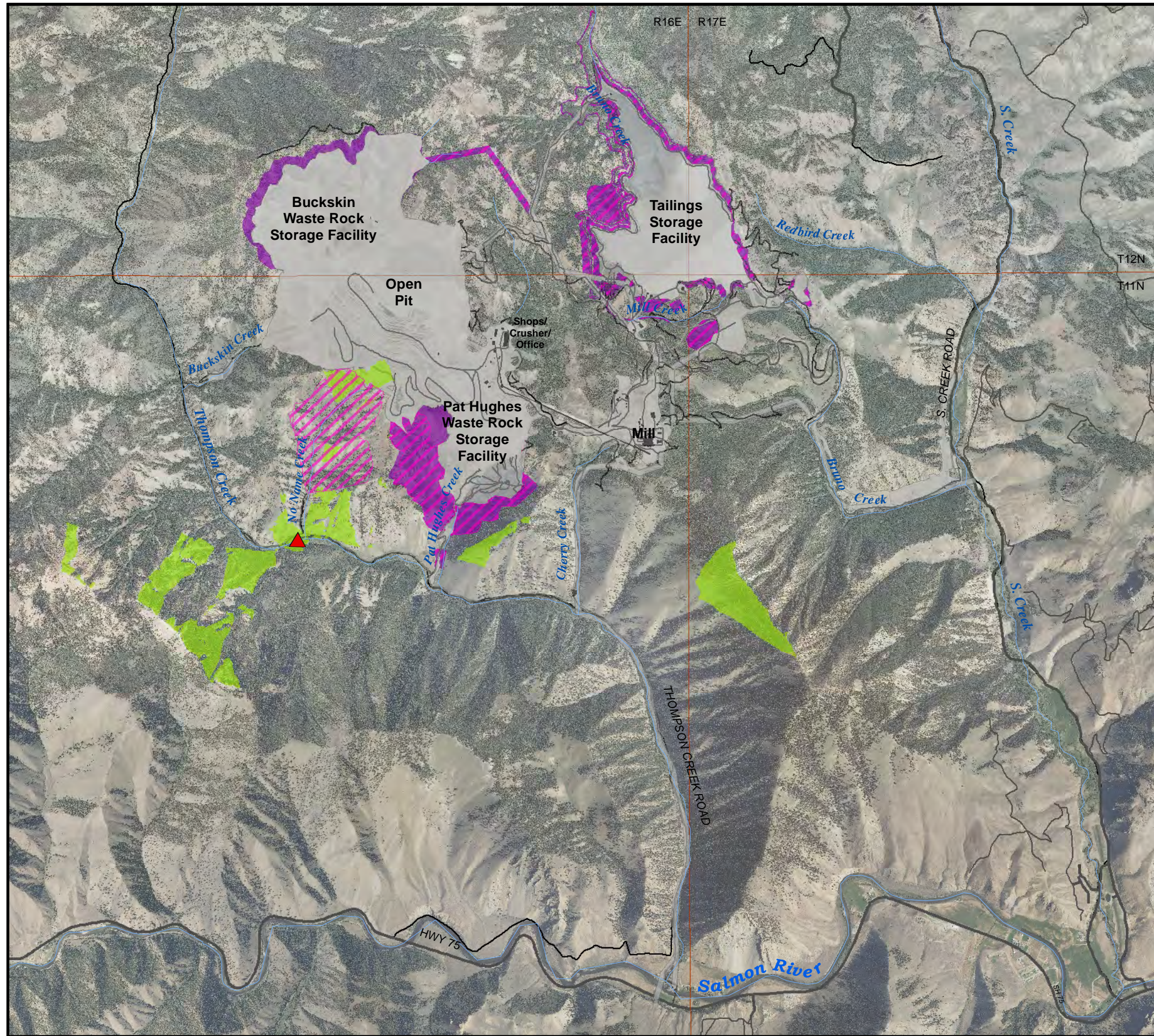
Flood data from Federal Emergency Management Agency (1998).
2009 NAIP Imagery

- Legend**
- Broken Wing Ranch NEPA parcels
 - Main Broken Wing Ranch access
 - 2WD road (Highway 75)
 - Primitive road
 - Stream
 - Special flood hazard areas (100-year floodplain)



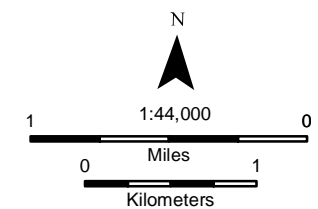
No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 3.9-3
Floodplains, Broken Wing Ranch
Thompson Creek Mine EIS



Legend

- Existing mining disturbance
- MMPO areas/Alternative M2
- MMPO areas/Alternative M3
- Stream
- 2WD road
- Primitive road
- KOP 2
- Visible from KOP 2

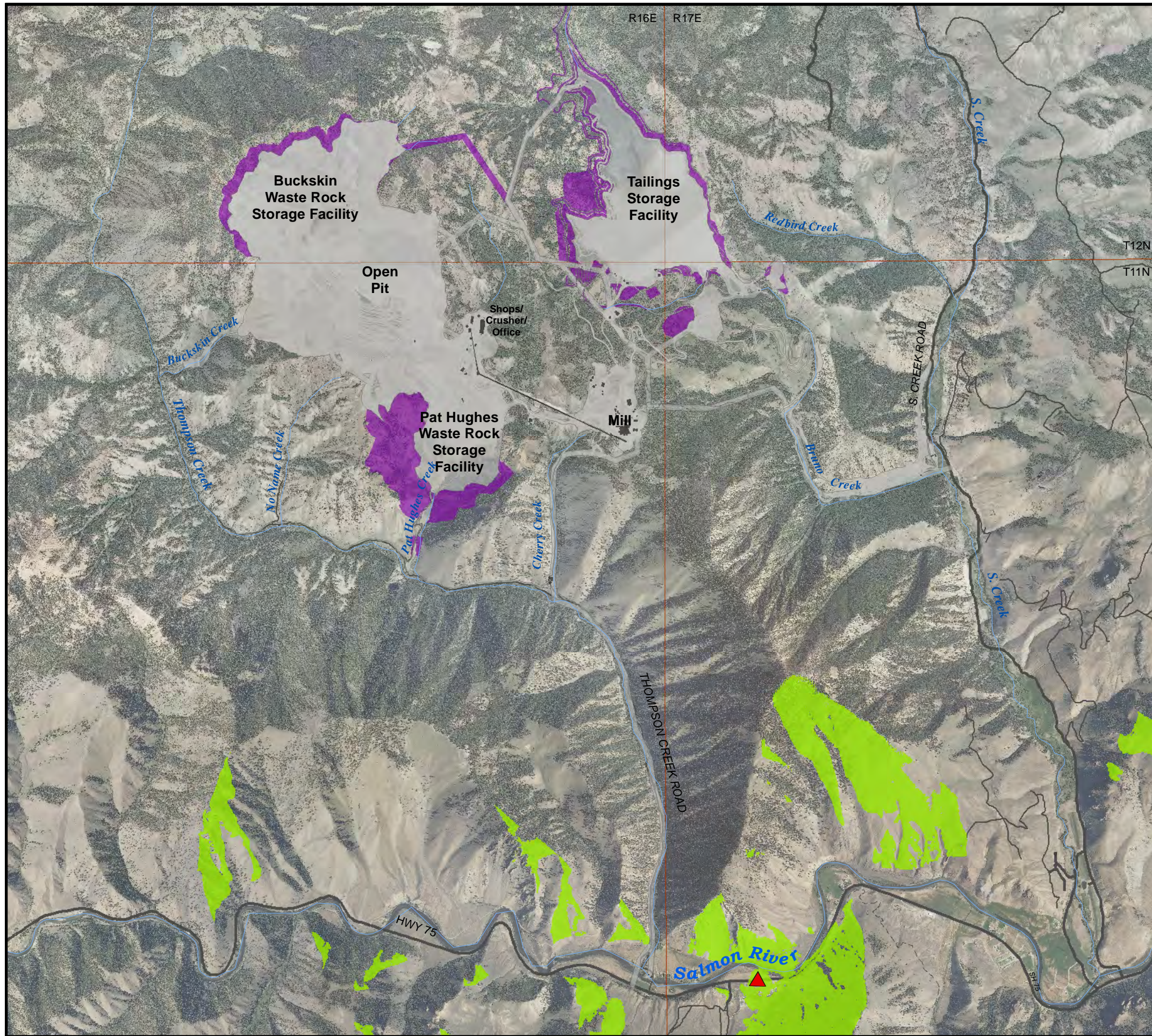


Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner.
 Viewshed Analysis by Connie Pixton, JBR Environmental Consultants, Inc.
 Imagery NAIP 2009
 Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 4.11-1
KOP 2, No Name Creek drainage viewshed analysis
Thompson Creek Mine EIS

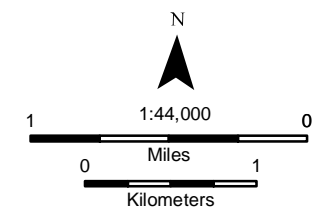


Legend

- Existing mining disturbance
- MMPO areas/Alternative M2
- Stream
- 2WD road
- Primitive road
- Trail

Viewshed Analysis

- KOP 4
- Visible from KOP 4



Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner.
Viewshed Analysis by Connie Pixton, JBR Environmental Consultants, Inc.
Imagery NAIP 2009
Coordinate system UTM Zone 11 NAD 83



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 4.11-2
KOP 4, Highway 75 viewshed analysis
Thompson Creek Mine EIS

Source	Description	Flow Estimates	
		best	upper
a	Buckskin cutoff seepage - colluvium (gpm)	0.002	0.166
	Buckskin metasediment groundwater (gpm)	1.59	1.59
b	Pat Hughes cutoff seepage - colluvium (gpm)	0.005	0.38
	Pat Hughes metasediment groundwater (gpm)	11.1	11.1
c	Seepage via Redbird (gpm)*	35	35
d	Seepage via Bruno (gpm)**	3.9	8.0
e	Treated water (cfs) via outfall 005 after year 30	2.04	2.04

*only during years 1-5 ** during years 6-plus

Receiving stream **annual low flows, 7q10**

---> Internal sources with no direct discharge

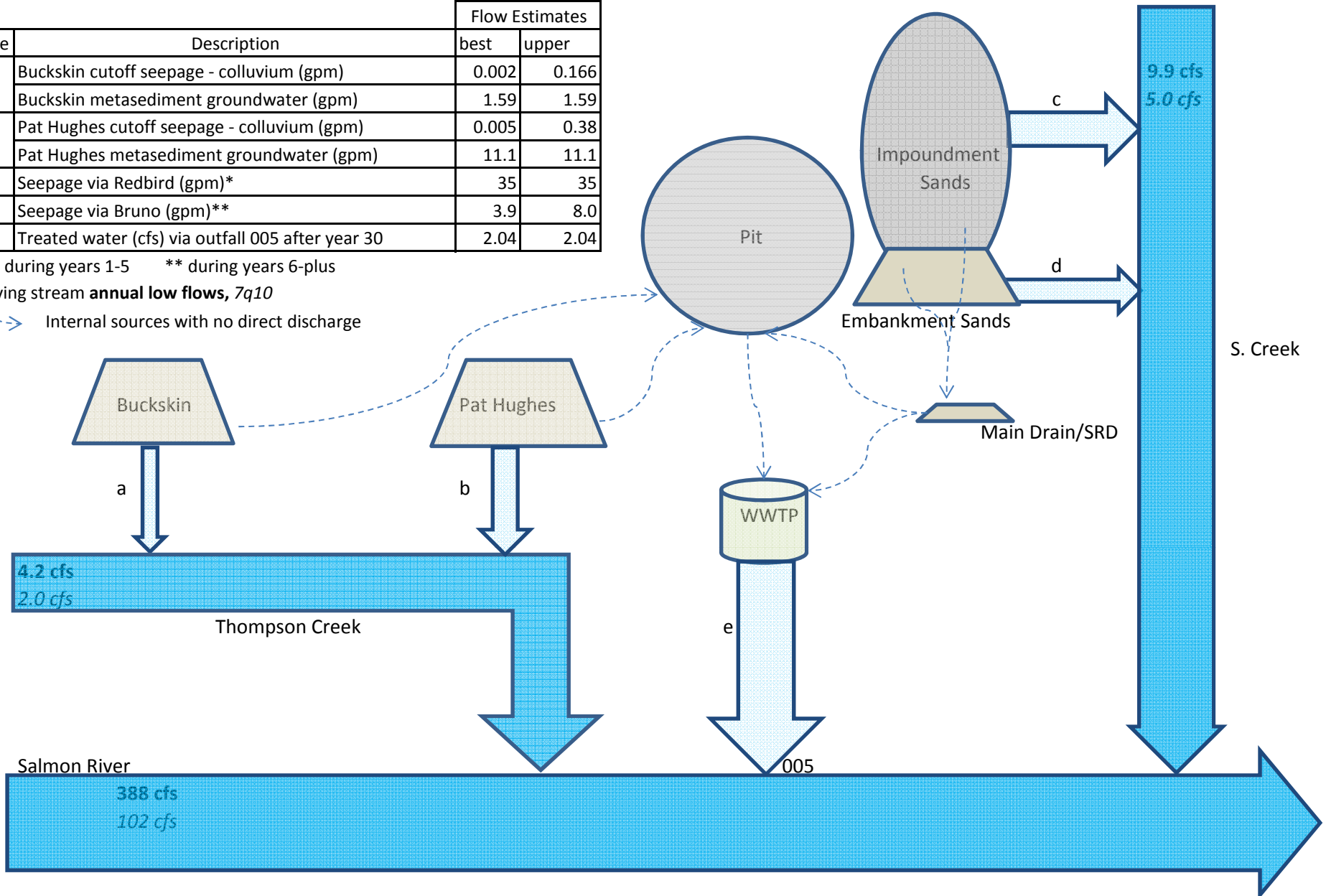


Figure 4.6-1. Alternative M1 reclamation source term fluxes and receiving water flows.

Flow Arrow	Description		Average (gpm)	Range (gpm)		
				Min	Max	
a	Buckskin to Lime Plant	Best Estimate		54	0	361
		Upper Estimate		169	55	934
b	Pat Hughes to Lime Plant	Best Estimate		125	64	581
		Upper Estimate		125	64	581
c	Lime Plant to Pit	Best Estimate	high flow	110	0	486
			low flow	70	0	581
		Upper Estimate	high flow	295	123	1,414
			low flow	0	0	0
d	Runoff to Pit			23	6	201
e	Main Drain Seepage			739	456	1,385
f	Discharge to WWTP			0	0	0

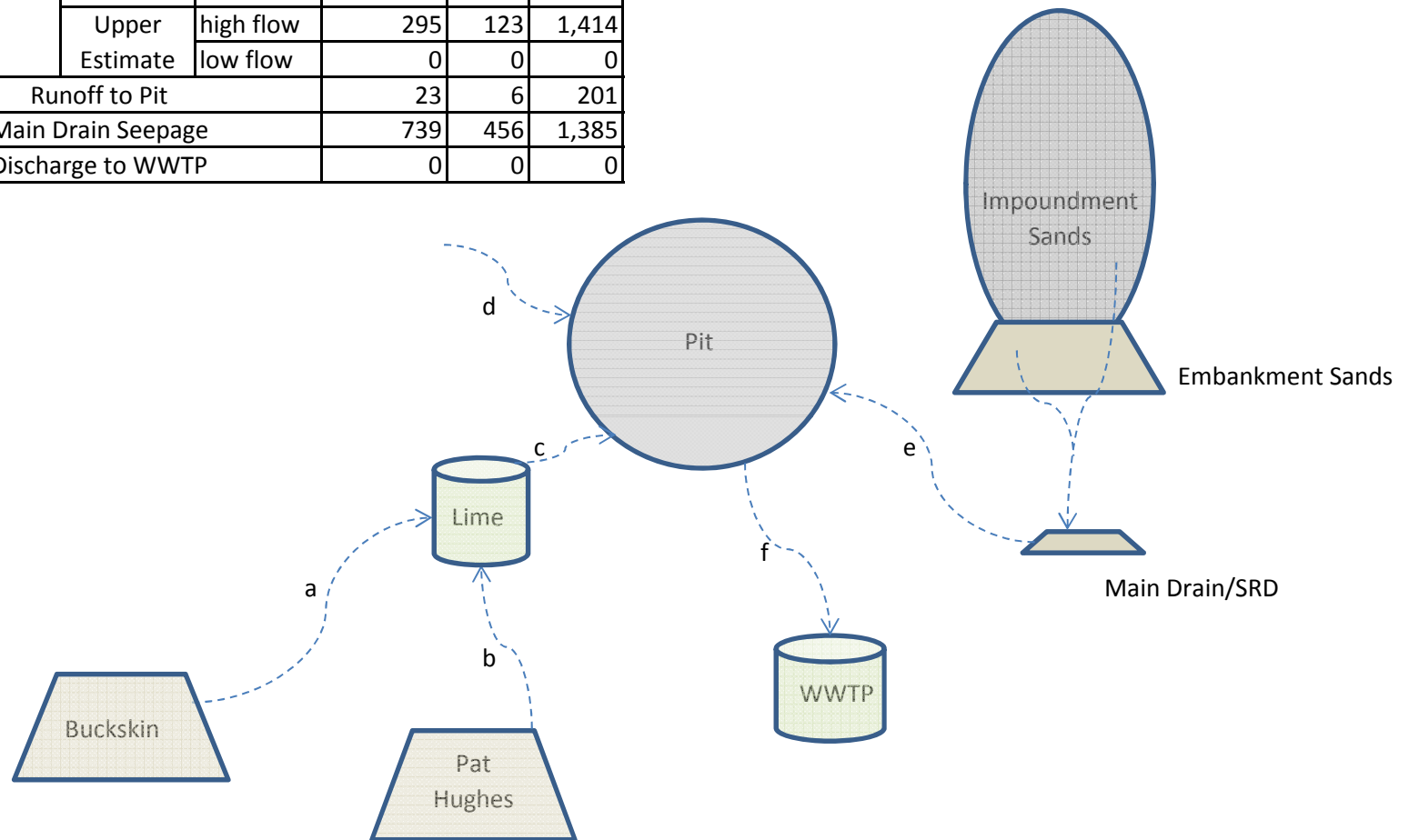


Figure 4.6-2. Alternative M1 water management, years 1-5.

Flow Arrow	Description		Average (gpm)	Range (gpm)		
				Min	Max	
a	Buckskin to Lime Plant	Best Estimate	52	0	406	
		Upper Estimate	224	45	1,580	
b	Pat Hughes to Lime Plant	Best Estimate	217	54	1,532	
		Upper Estimate	217	54	1,532	
c	Lime Plant to Pit	Best Estimate	high flow	115	0	1,082
			low flow	141	0	1,532
		Upper Estimate	high flow	423	104	3,099
			low flow	0	0	0
d	Runoff to Pit		80	5	1,566	
e	Main Drain Seepage to WWTP		145	---		
f	Pit Discharge to WWTP from year 31		636	0	11,938	

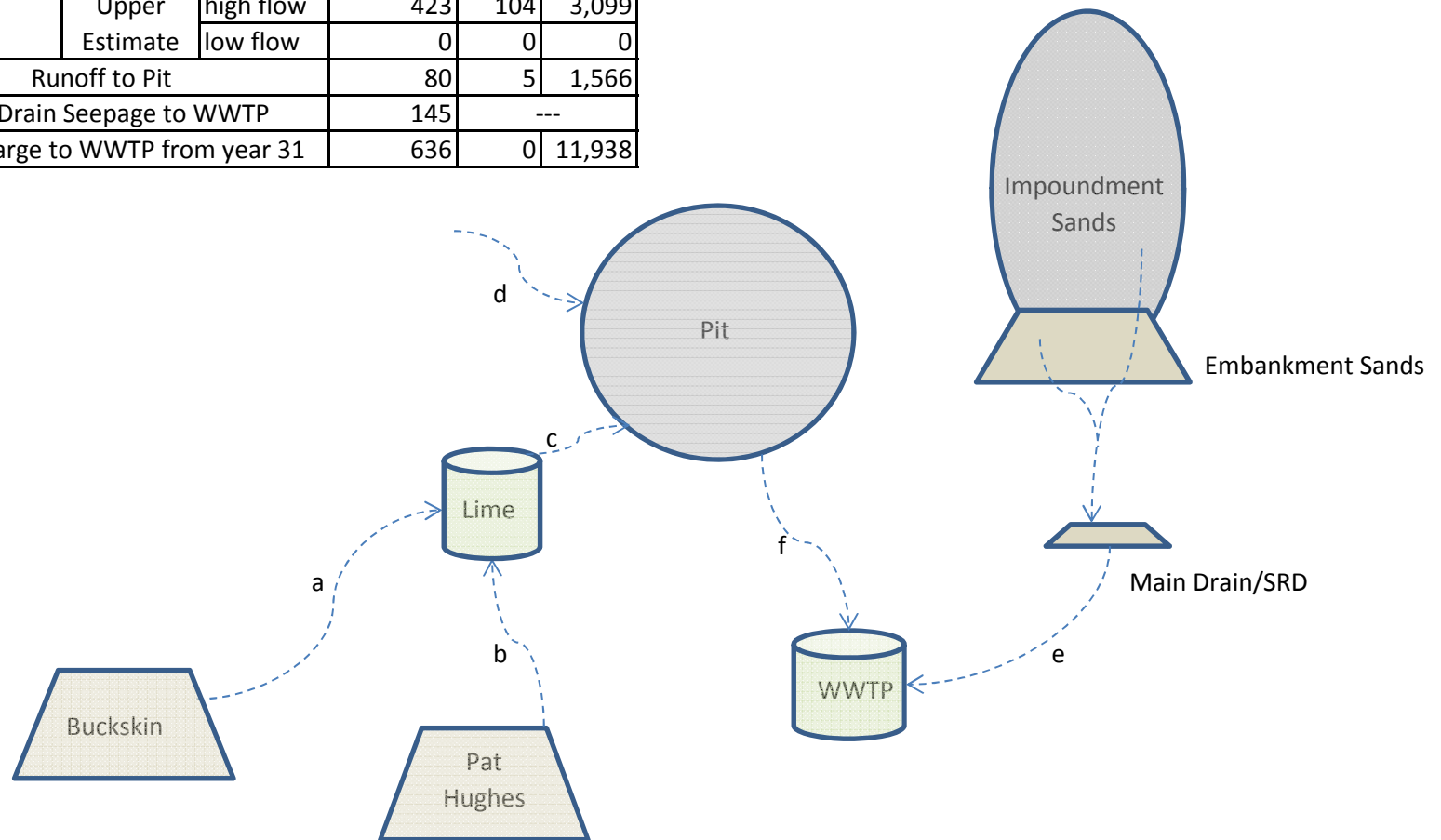
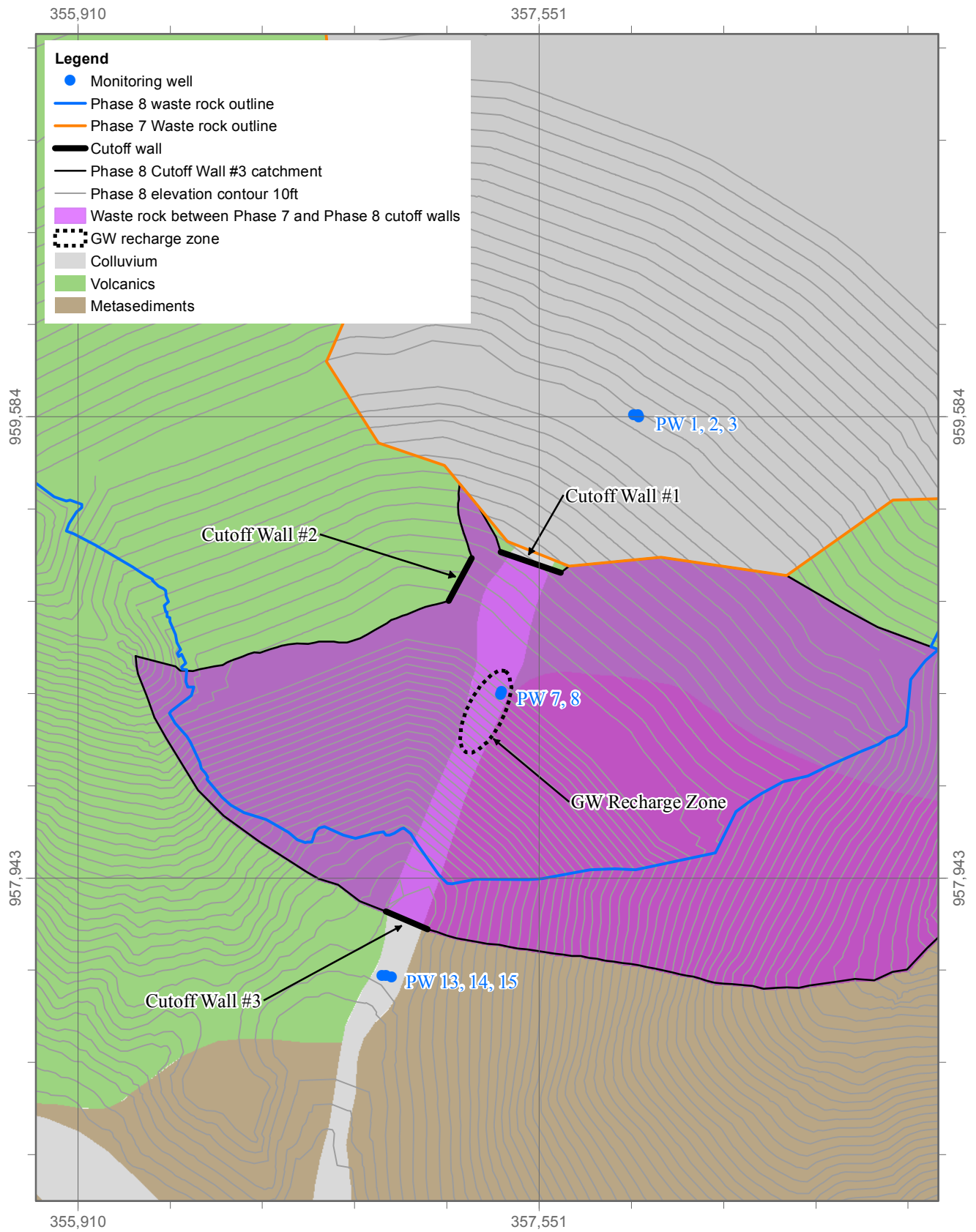
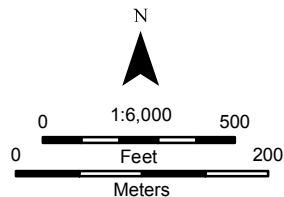


Figure 4.6-3. Alternative M1 water management, years 6-plus.

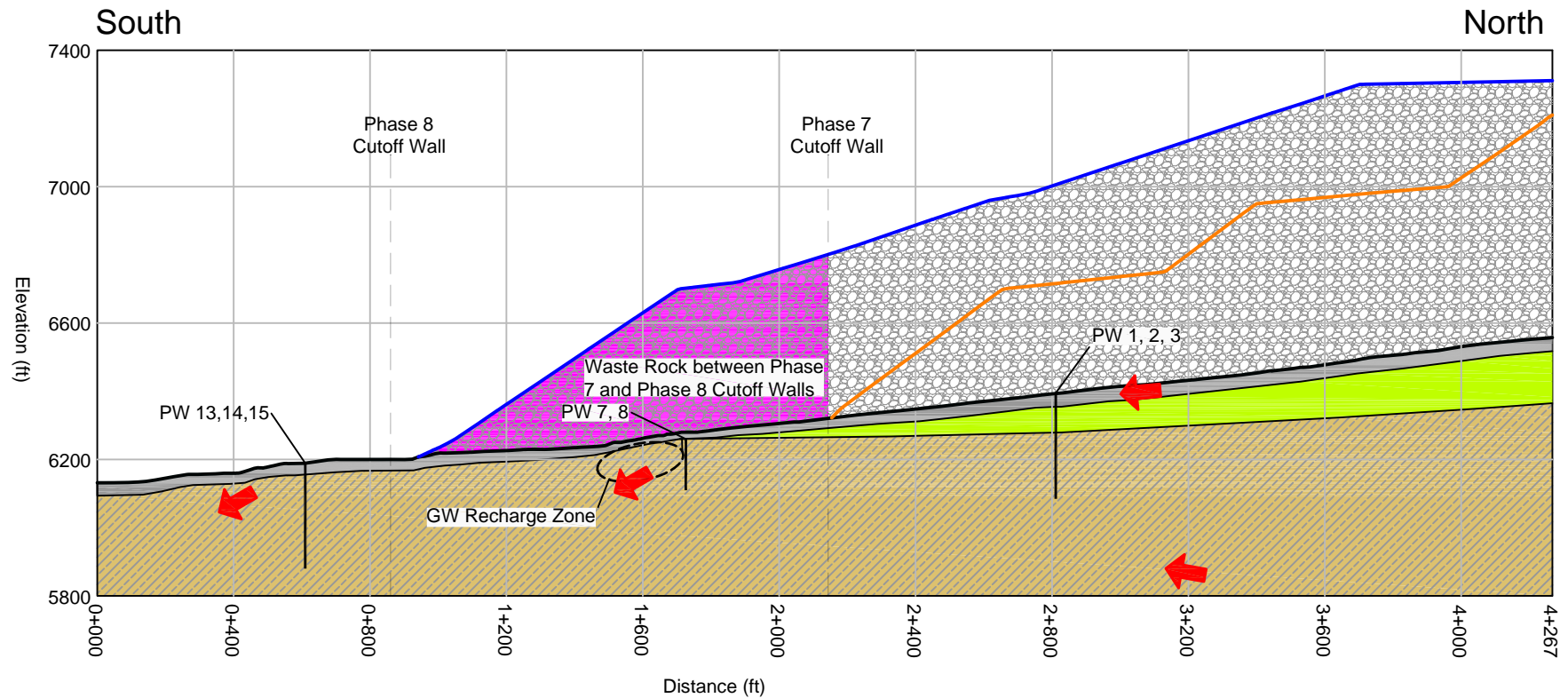


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Data source JBR (2012g)

Figure 4.6-4
Groundwater cutoff walls,
Pat Hughes Creek watershed
Thompson Creek Mine EIS



LEGEND

- Original topography
- Phase 7 topography
- Phase 8 topography
- Groundwater recharge zone
- Flow direction
- Waste rock between Phase 7 and Phase 8 cutoff walls
- Waste rock
- Volcanics
- Metasediments

Vertical Exaggeration: 1X

Scale: 1:6000

Units: Feet



Source: JBR 2012g



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Figure 4.6-5
Groundwater cutoff walls, cross-section,
Pat Hughes Creek watershed
Thompson Creek Mine EIS

Source	Description	Flow Estimates	
		best	upper
a	Buckskin cutoff seepage - colluvium (gpm)	0.002	0.166
	Buckskin metasediment groundwater (gpm)	1.59	1.59
b	Pat Hughes cutoff seepage - colluvium (gpm)	0.027	1.94
	Pat Hughes metasediment groundwater (gpm)	11.1	11.1
c	Seepage via Redbird (gpm)*	45	45
d	Seepage via Bruno (gpm)**	3.9	8.0
e	Treated water (cfs) via outfall 005 after year 70	2.1	2.1

*only during years 1-5 **during years 6-plus

Receiving stream **annual low flows, 7q10**

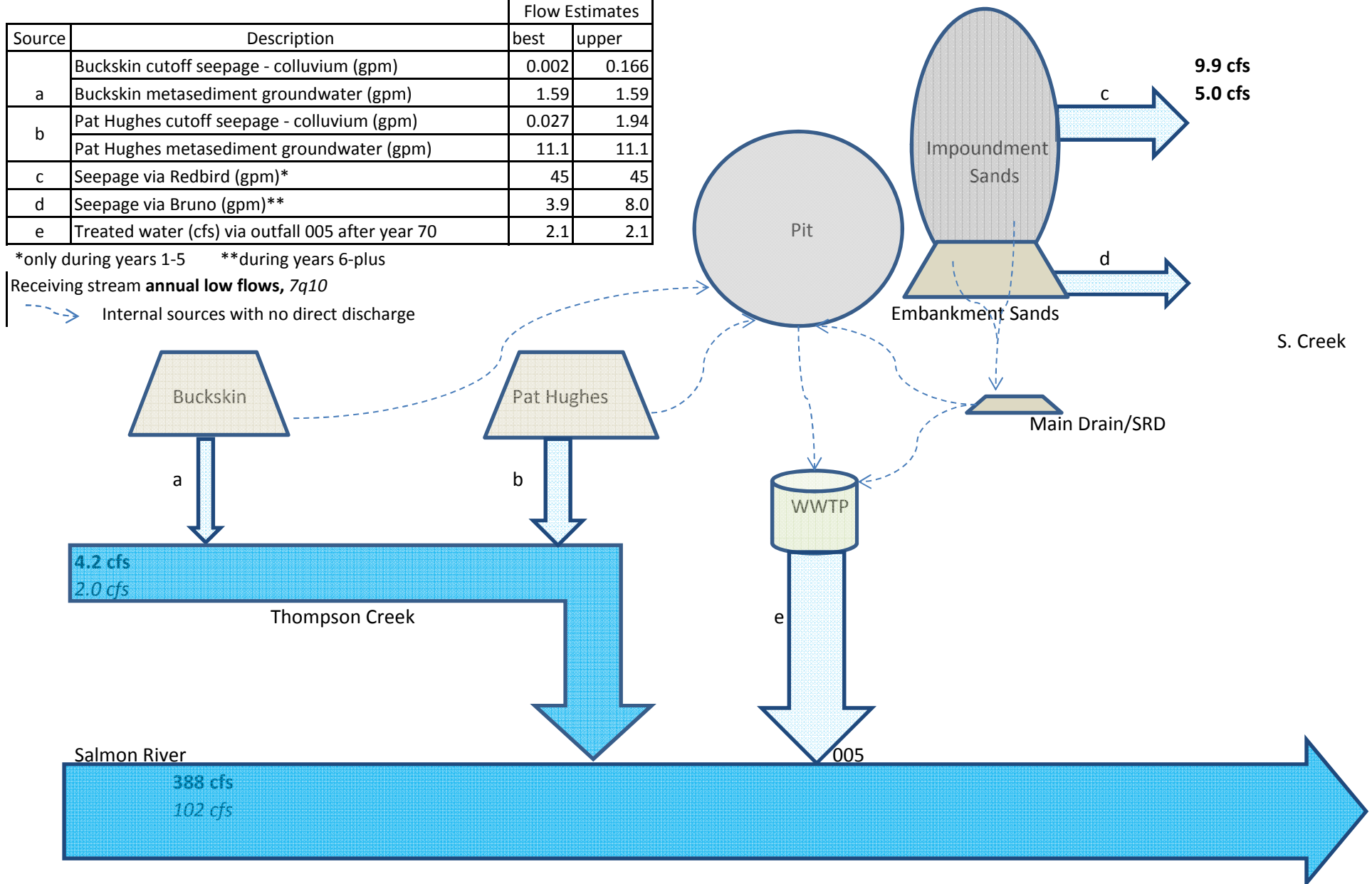


Figure 4.6-6. Alternative M2 reclamation source term fluxes and receiving water flows.

Flow Arrow	Description		Average (gpm)	Range (gpm)		
				Min	Max	
a	Buckskin to Lime Plant	Best Estimate		53	0	359
		Upper Estimate		166	54	881
b	Pat Hughes to Lime Plant	Best Estimate		149	83	608
		Upper Estimate		149	83	608
c	Lime Plant to Pit	Best Estimate	high flow	123	0	513
			low flow	80	0	608
		Upper Estimate	high flow	315	142	1,417
			low flow	0	0	0
d	Runoff to Pit			13	3	120
e	Main Drain Seepage			739	456	1,385
f	Discharge to WWTP			0	0	0

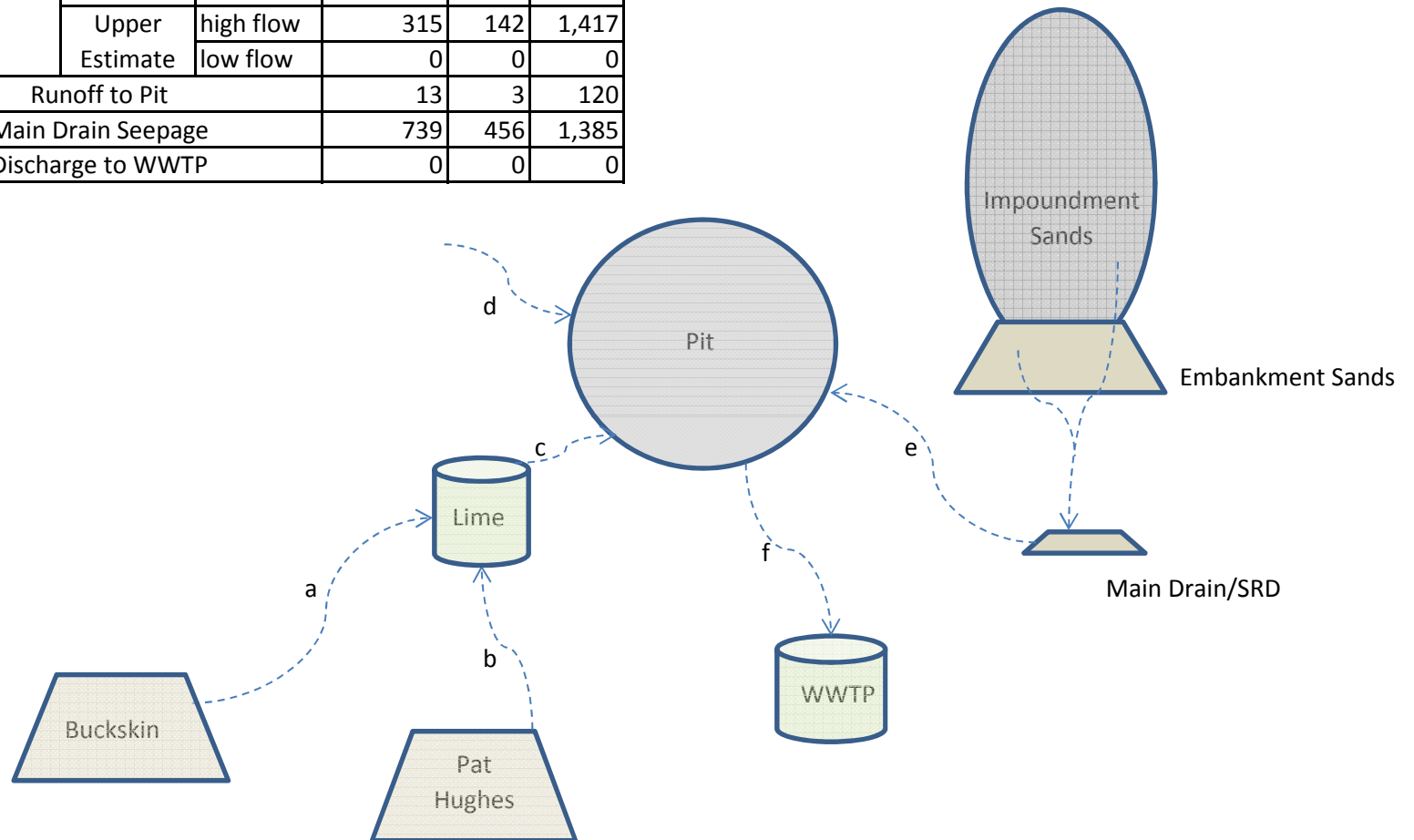


Figure 4.6-7. Alternative M2 water management, years 1-5.

Flow Arrow	Description		Average (gpm)	Range (gpm)		
				Min	Max	
a	Buckskin to Lime Plant	Best Estimate		51	0	403
		Upper Estimate		219	45	1,497
b	Pat Hughes to Lime Plant	Best Estimate		239	70	1,579
		Upper Estimate		239	70	1,579
c	Lime Plant to Pit	Best Estimate	high flow	128	0	994
			low flow	150	0	1,579
		Upper Estimate	high flow	440	120	3,069
			low flow	0	0	0
d	Runoff to Pit			36	3	654
e	Main Drain Seepage			145	---	
f	Discharge to WWTP from Year 28			655	0	15,523

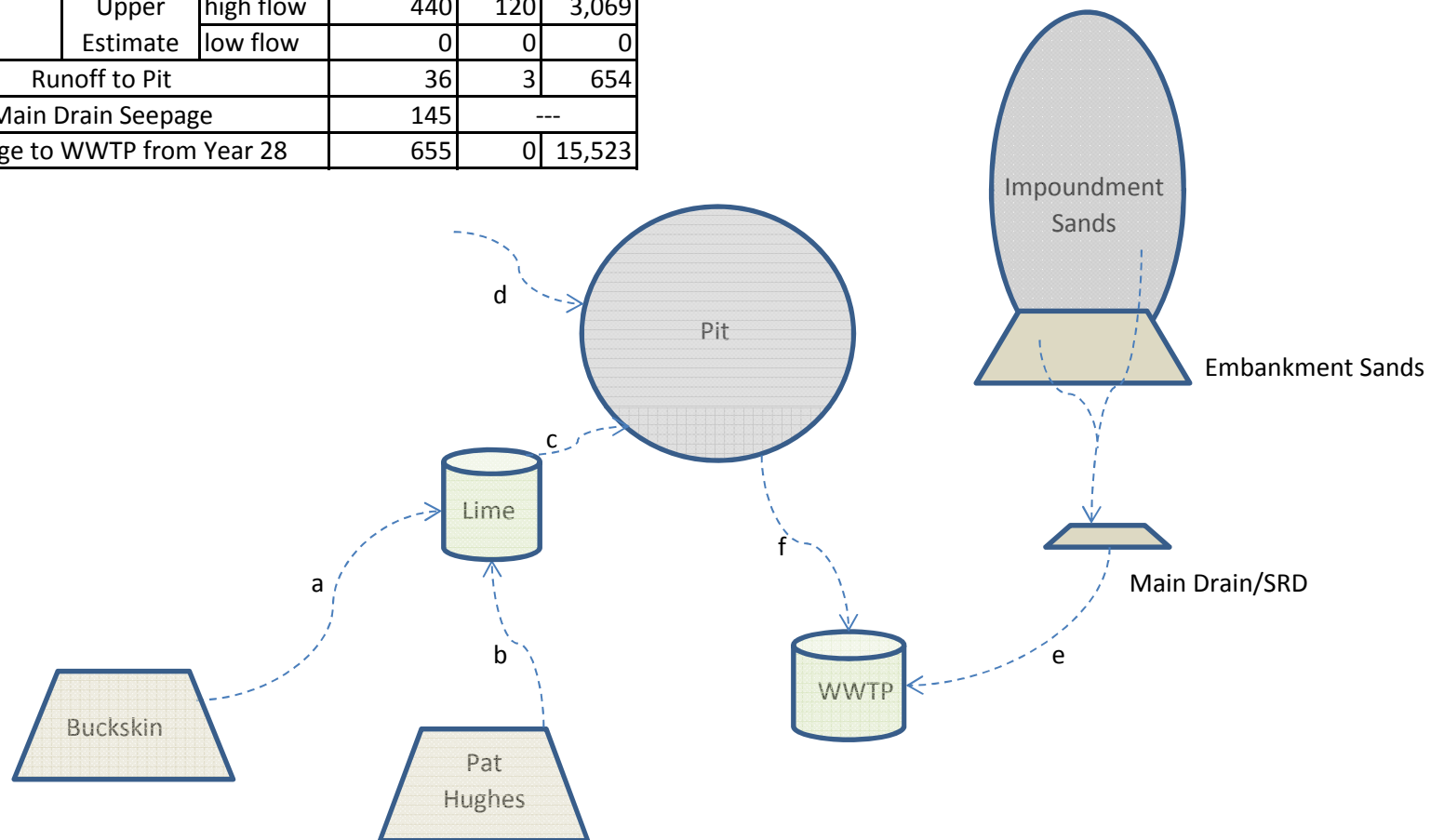
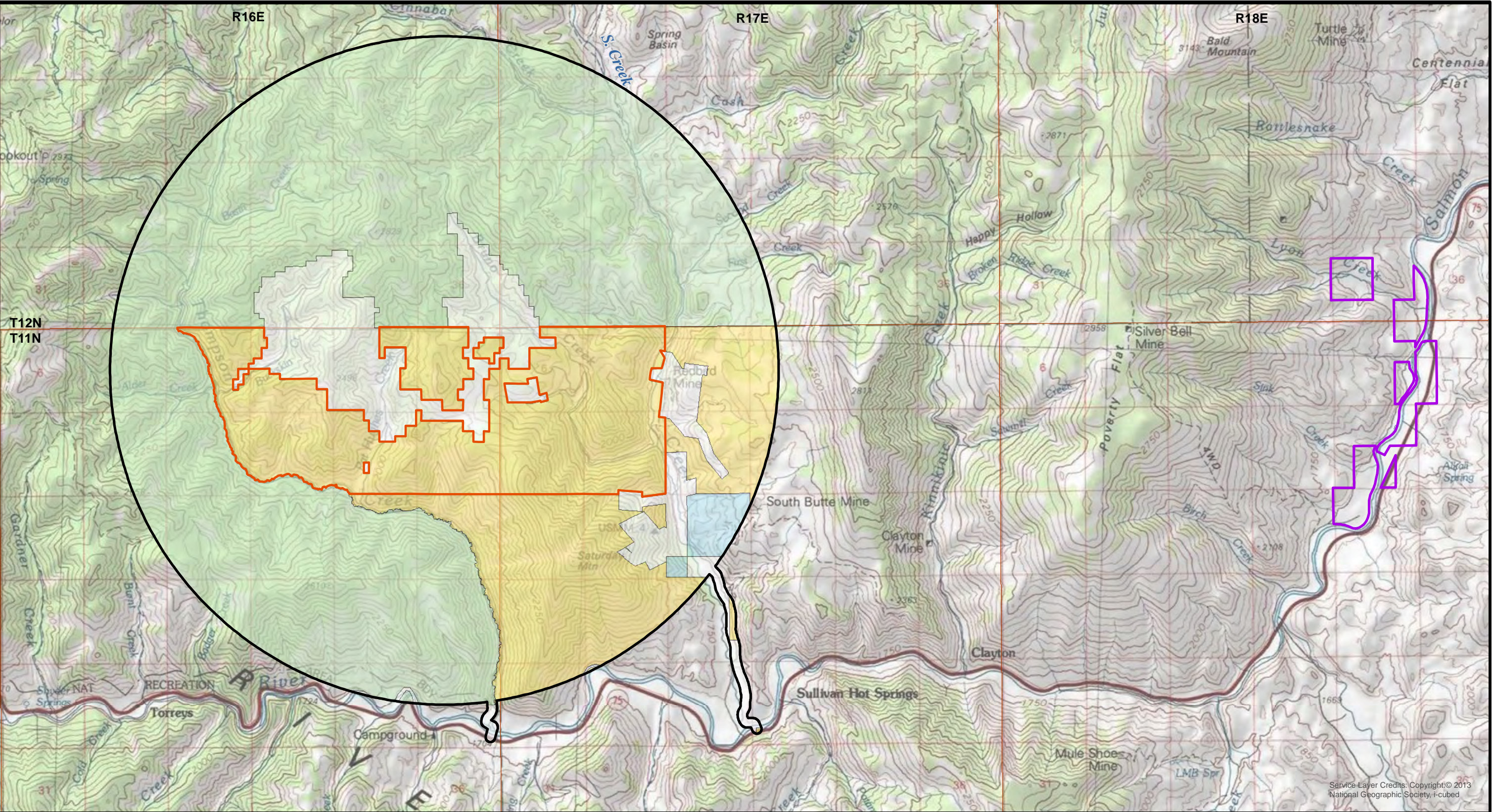


Figure 4.6-8 Alternative M2 water management, years 6-plus.

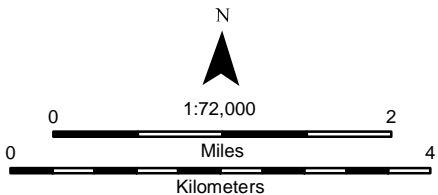


Legend

- Selected land
- Offered land - Broken Wing Ranch
- CESA

Land Ownership within CESA

- BLM
- Private
- State
- Forest Service

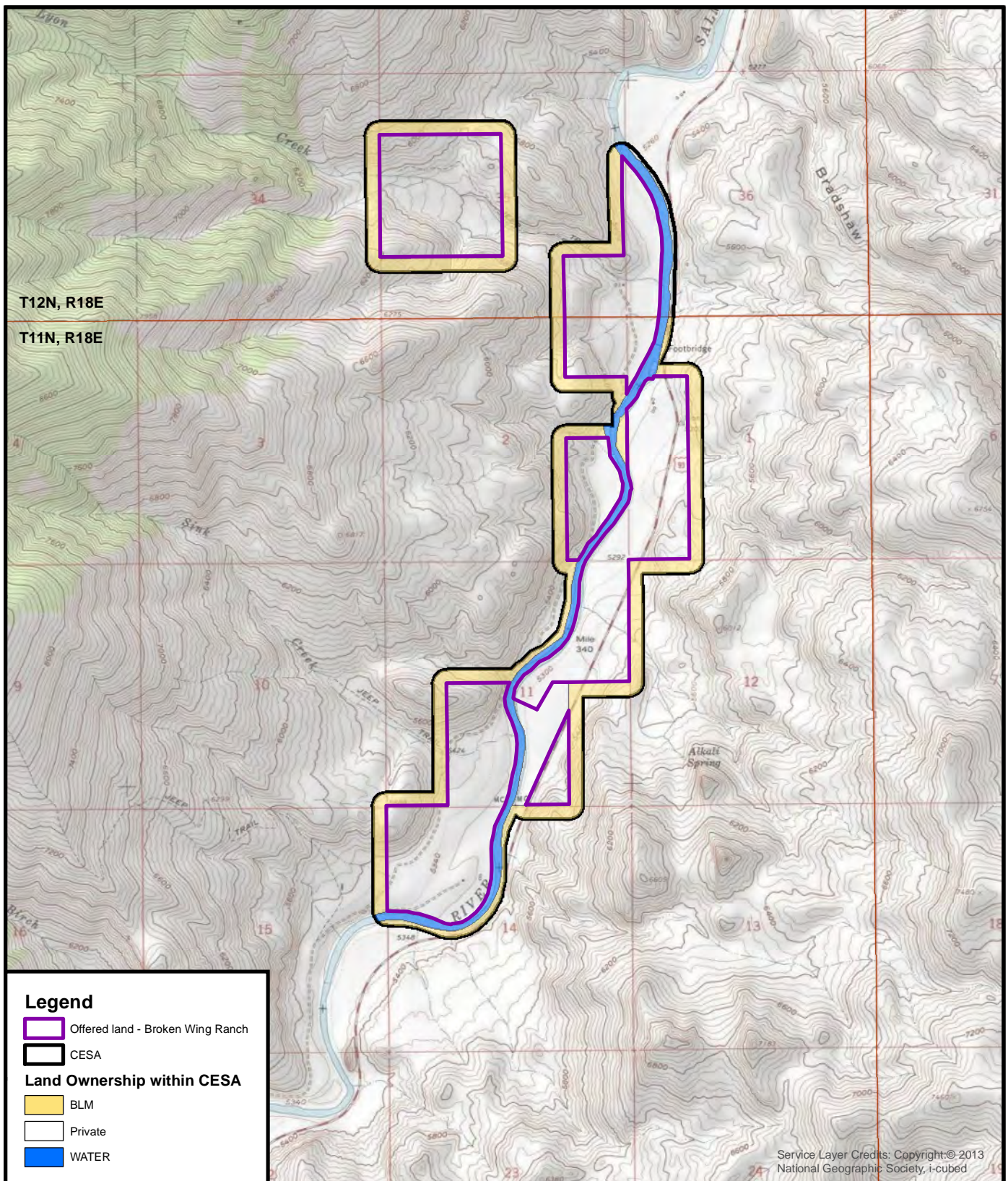


Selected land from Thompson Creek Mine data, polygons created by Ken Gardner.
 Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management,
 Idaho State Office, Geographic Sciences.
 Coordinate system UTM Zone 11 NAD 83



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Figure 5.10-1
Noise CESA, selected land
Thompson Creek Mine EIS



Selected land from Thompson Creek Mine data, polygons created by Ken Gardner.
 Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management,
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 Coordinate system UTM Zone 11 NAD 83



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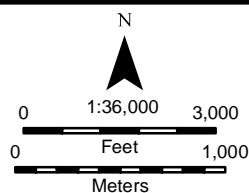


Figure 5.10-2
Noise CESA, Broken Wing Ranch
Thompson Creek Mine EIS

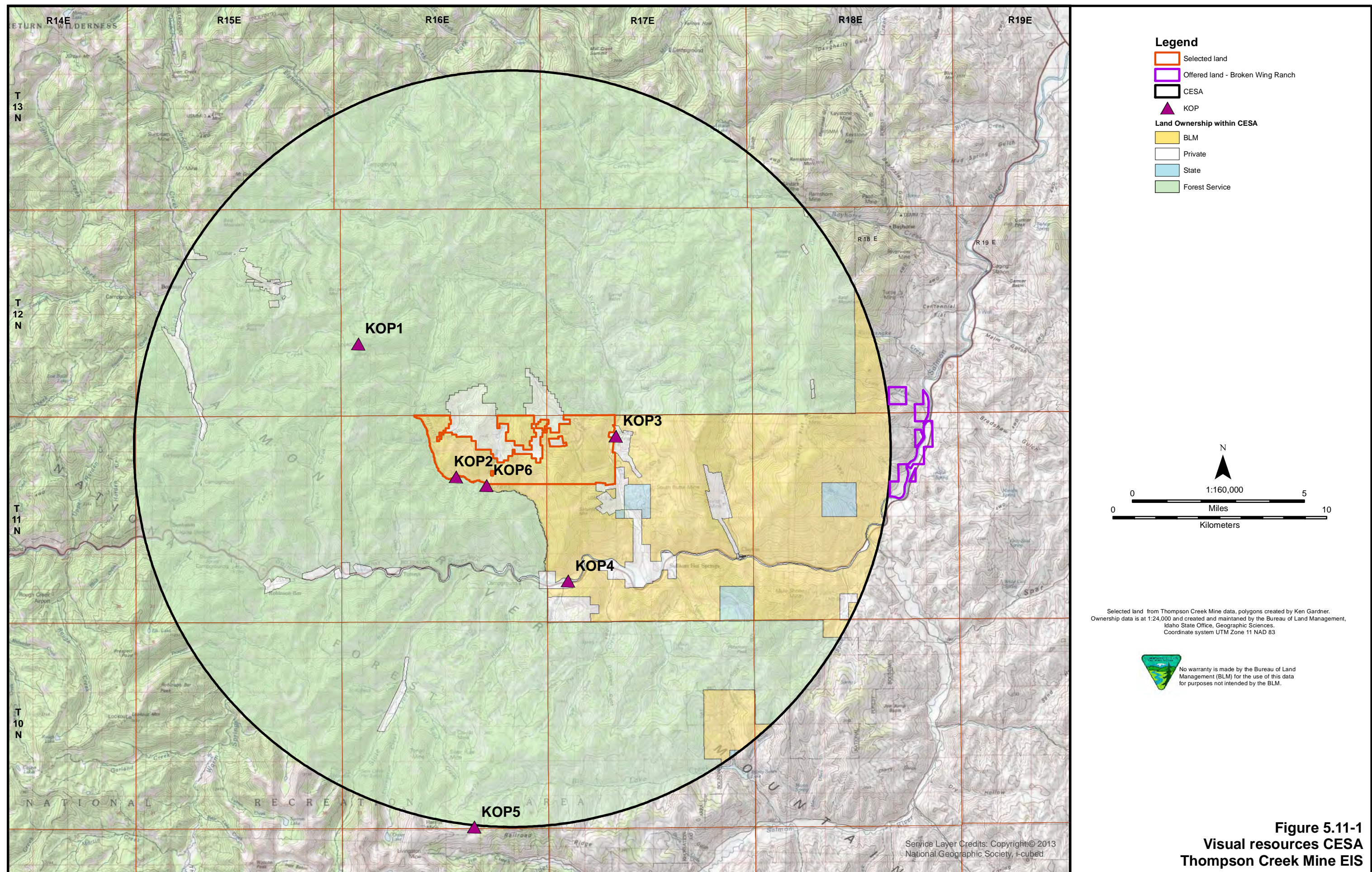
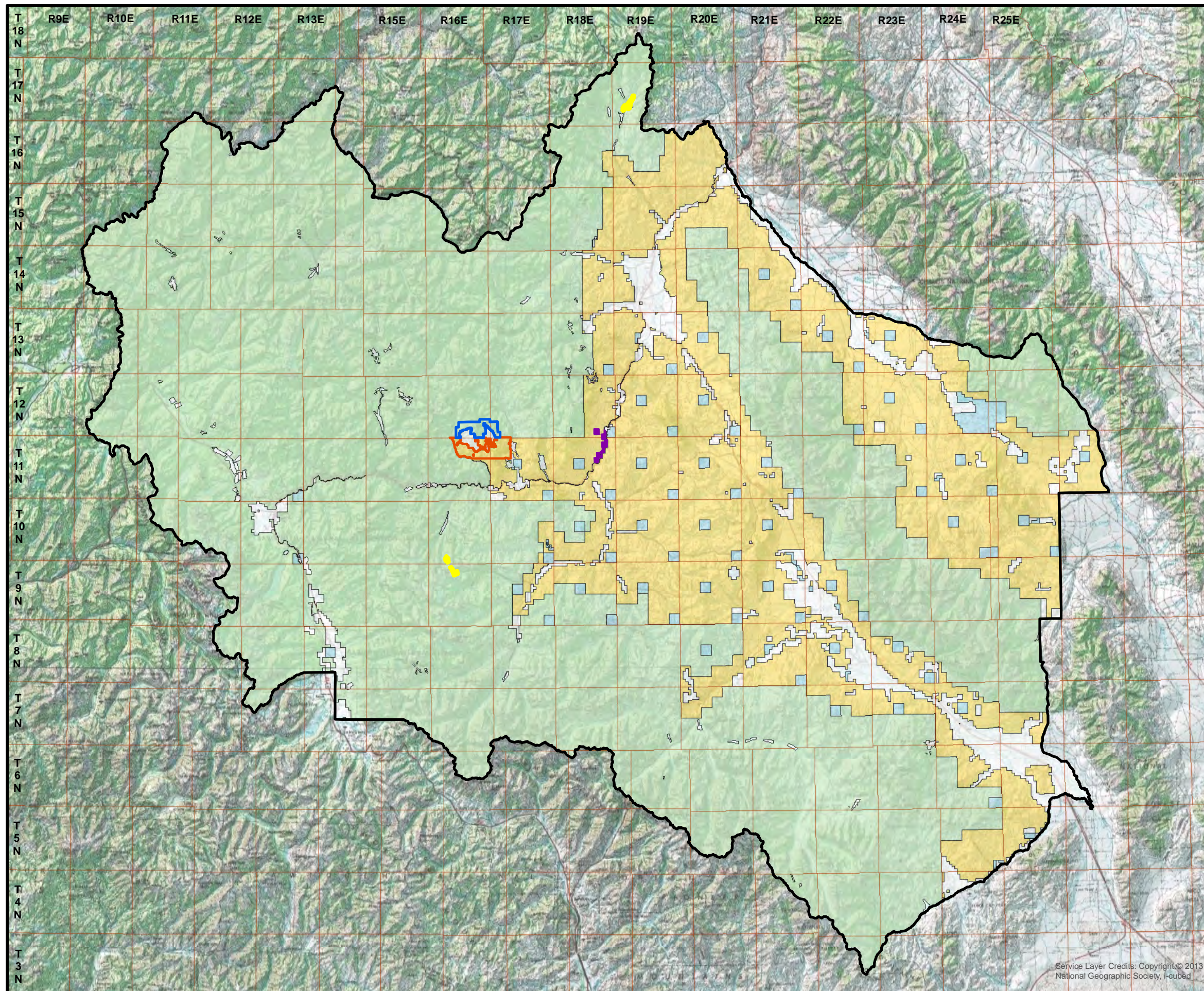


Figure 5.11-1
Visual resources CESA
Thompson Creek Mine EIS

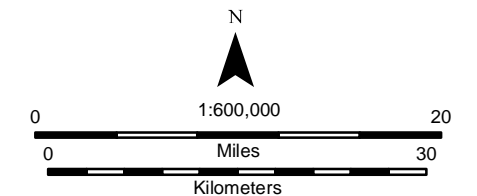


Legend

- Selected land
- Selected land - TCMC-USFS land exchange
- Offered land - Broken Wing Ranch
- Offered land - TCMC-USFS land exchange
- CESA

Land Ownership within CESA

- BLM
- Private
- State
- Forest Service



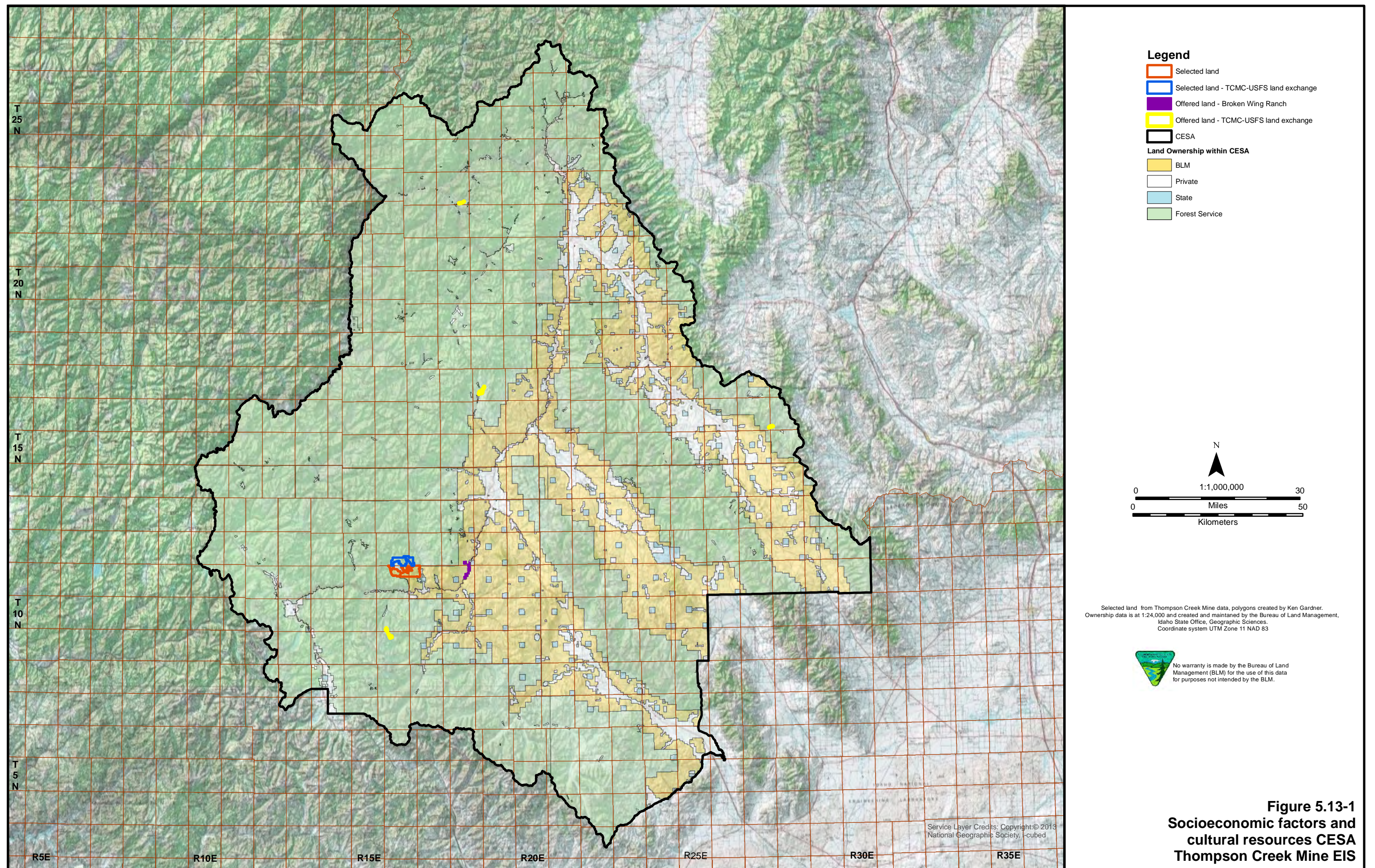
Selected land from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management,
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Coordinate system UTM Zone 11 NAD 83

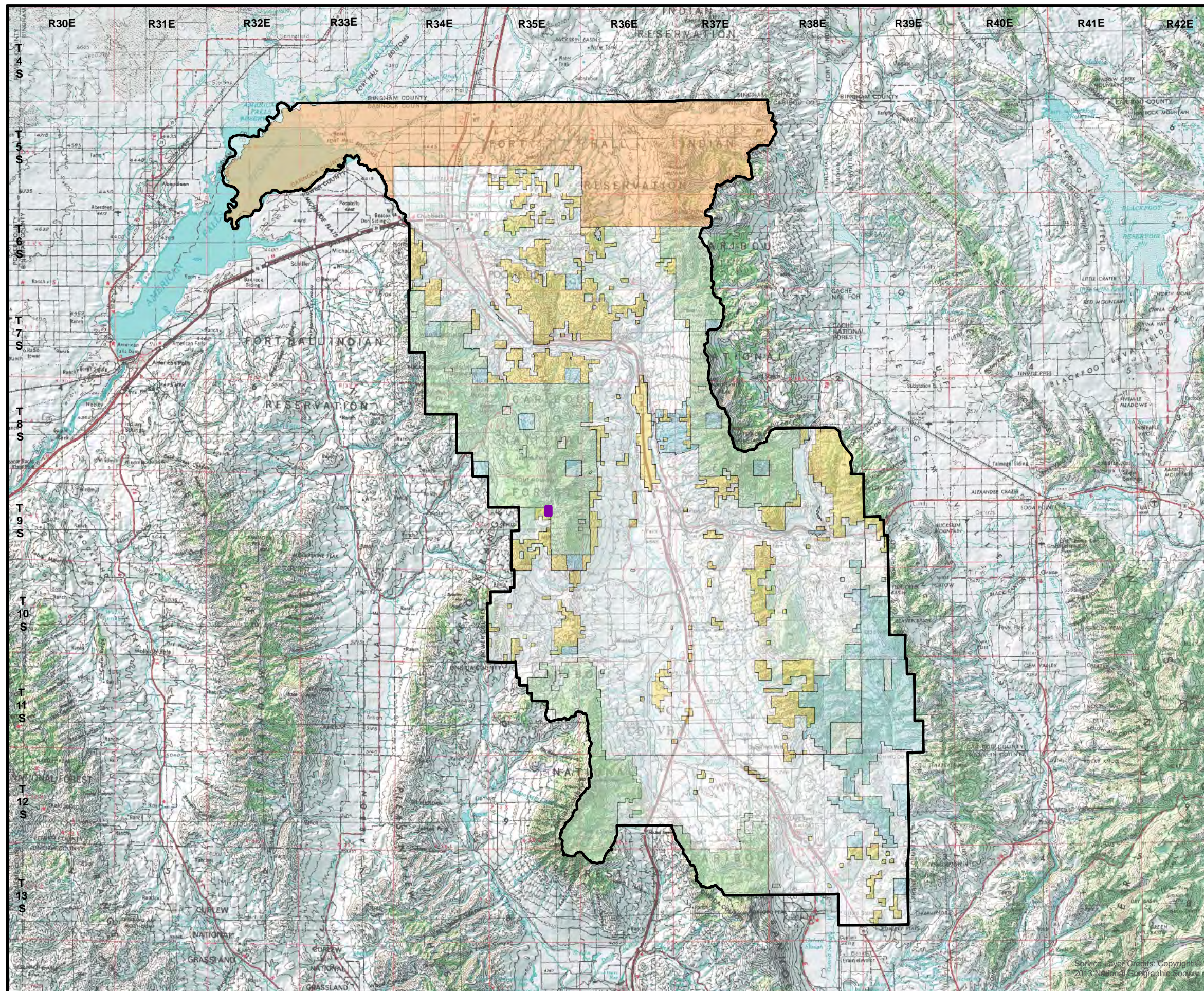


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Figure 5.12-1
Land use and recreation CESA
Thompson Creek Mine EIS

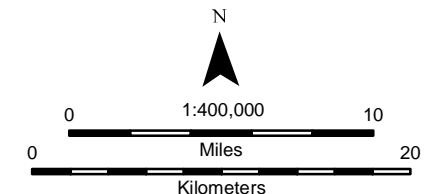
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Legend

- Offered and - Garden Creek property
- CESA
- Land Ownership with CESA**
 - BLM
 - Bureau of Reclamation
 - Indian Reservation
 - Private
 - State
 - Forest Service



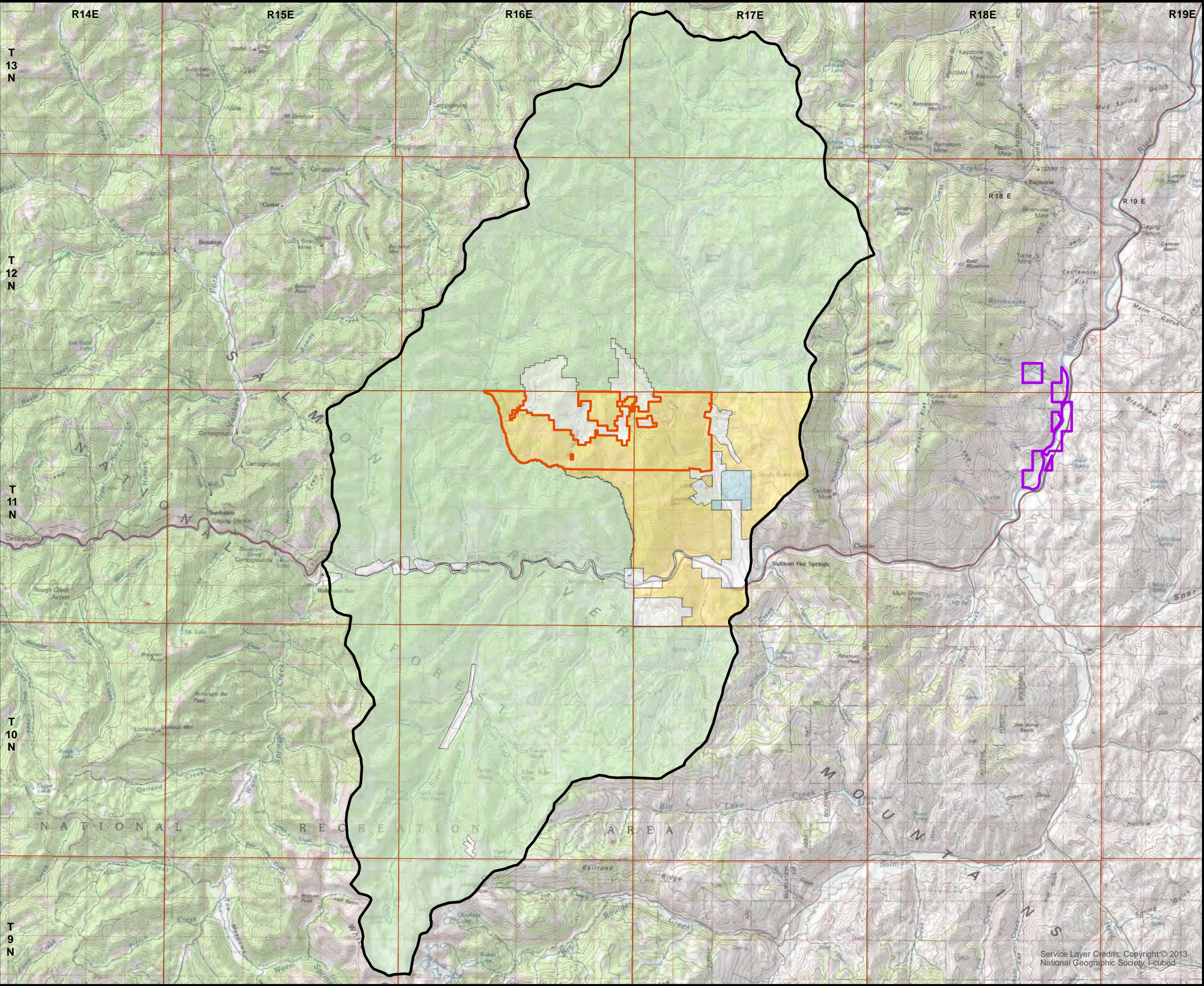
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Figure 5.14-1
Tribal treaty rights and interests
and cultural resources CESA,
Garden Creek property
Thompson Creek Mine EIS

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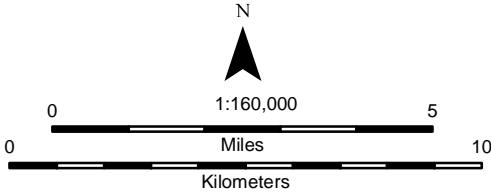


Legend

- Selected land
- Offered land - Broken Wing Ranch
- CESA

Land Ownership within CESA

- BLM
- Private
- State
- Forest Service

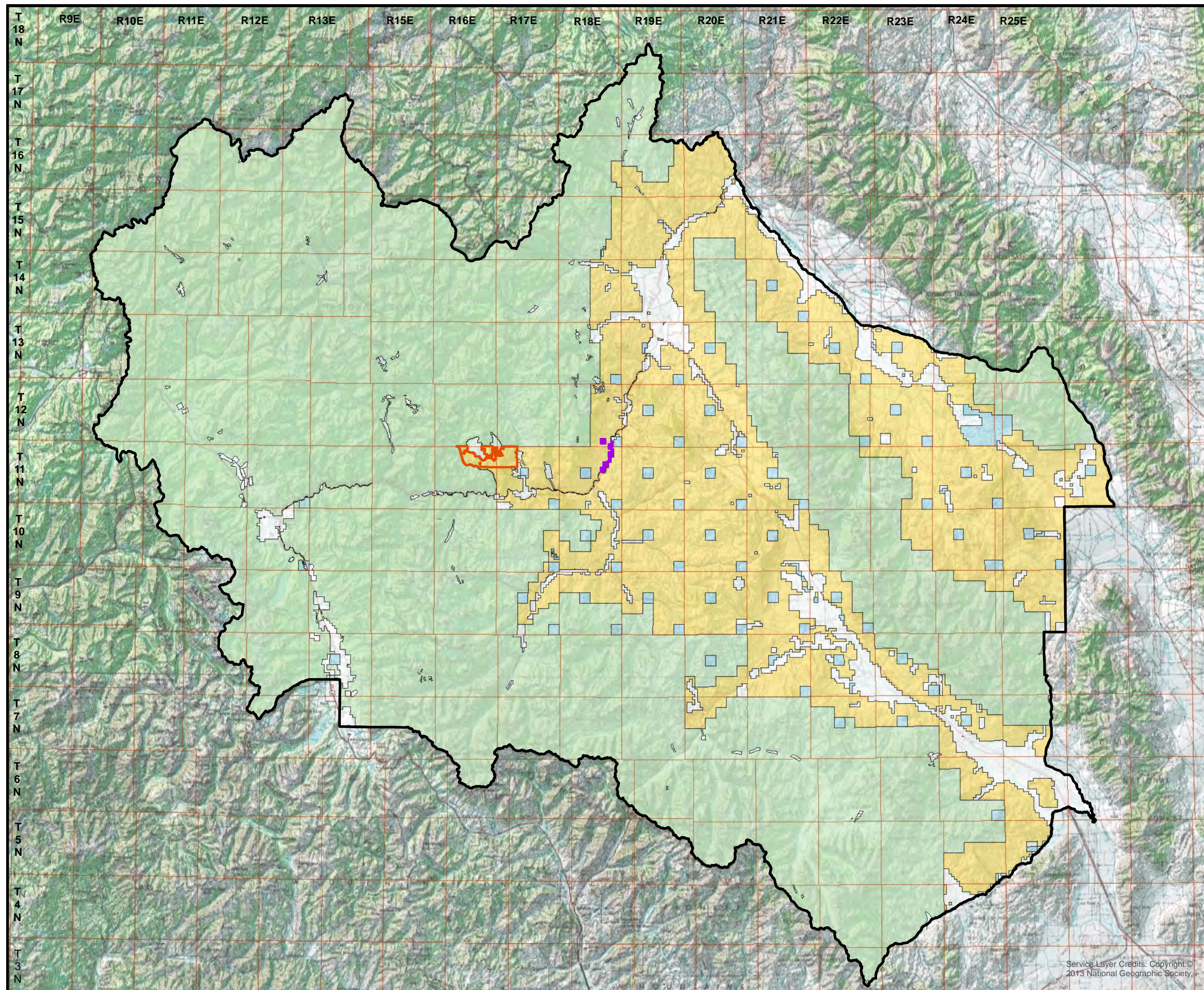


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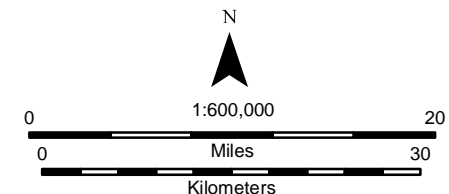
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Figure 5.2-1
Geologic and soil resources CESA
Thompson Creek Mine EIS



Legend

- Selected land
- Offered land - Broken Wing Ranch
- CESA
- Land Ownership within CESA
 - BLM
 - Private
 - State
 - Forest Service



Selected land from Thompson Creek Mine data, polygons created by Ken Gardner.
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Figure 5.2-2
Minerals and air quality CESA
Thompson Creek Mine EIS

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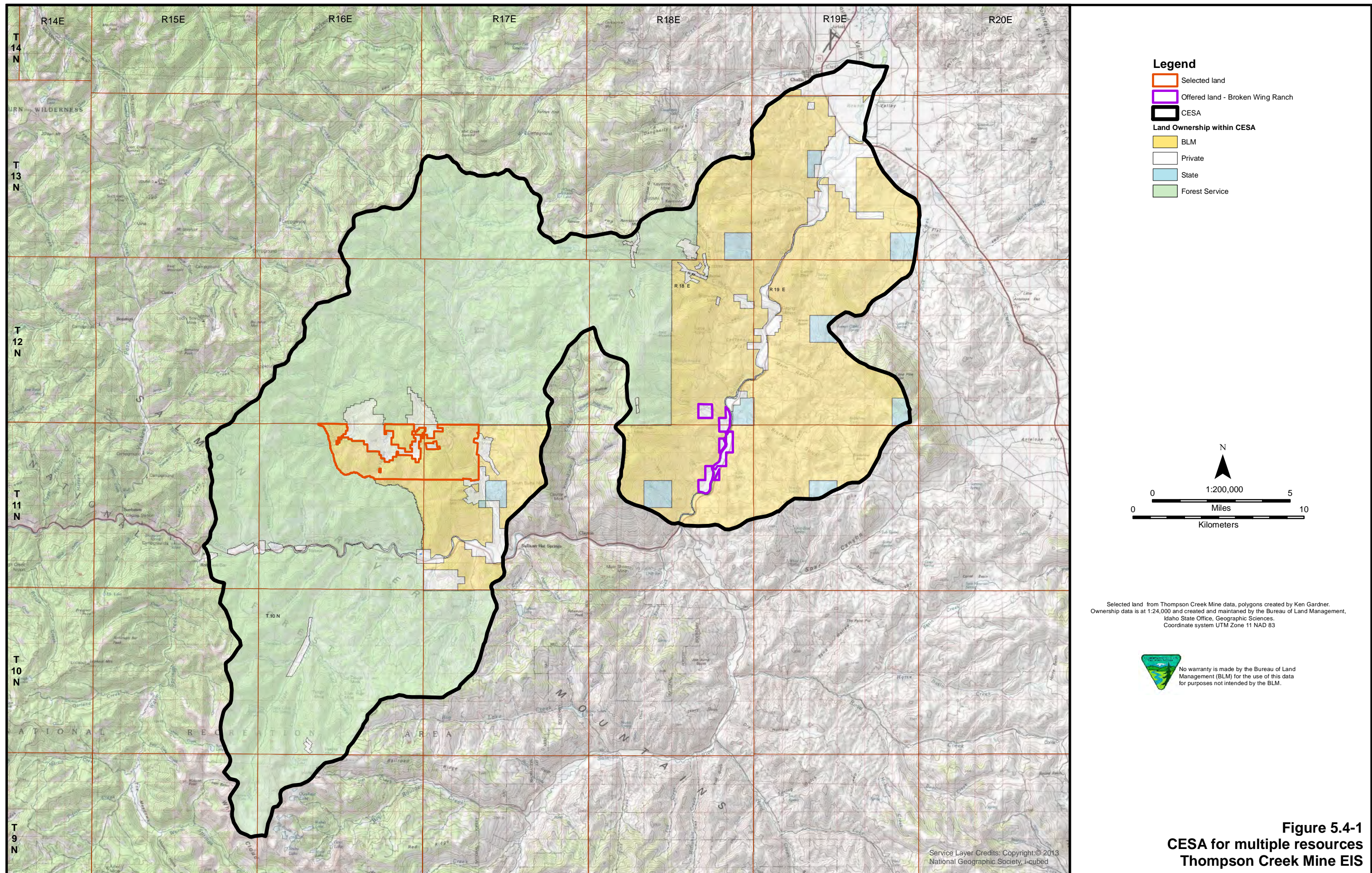
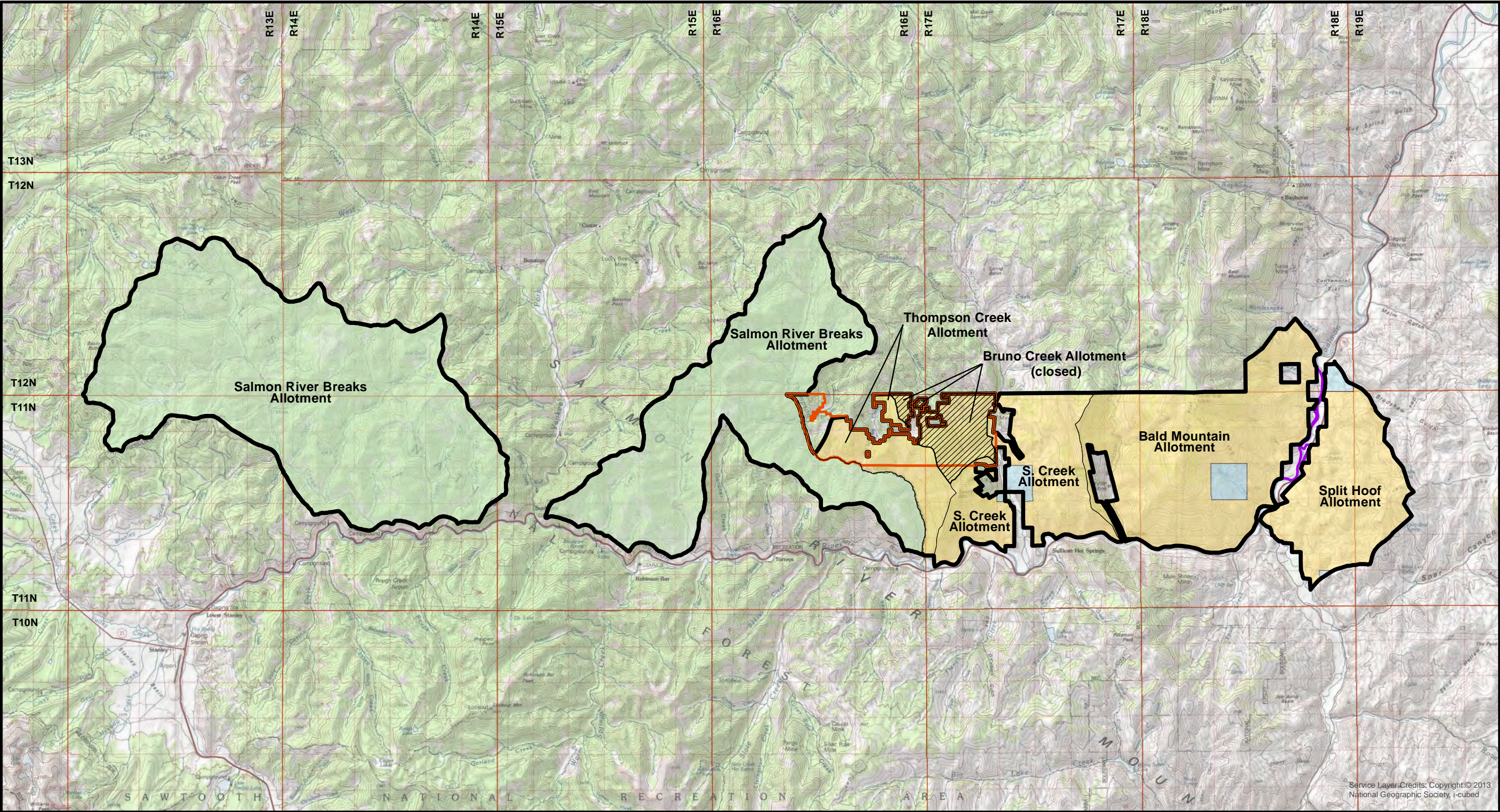


Figure 5.4-1
CESA for multiple resources
Thompson Creek Mine EIS

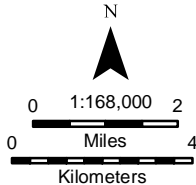


Legend

- Selected land
- Offered land - Broken Wing Ranch
- CESA

Allotments within CESA

- Active Allotment
- Closed Allotment

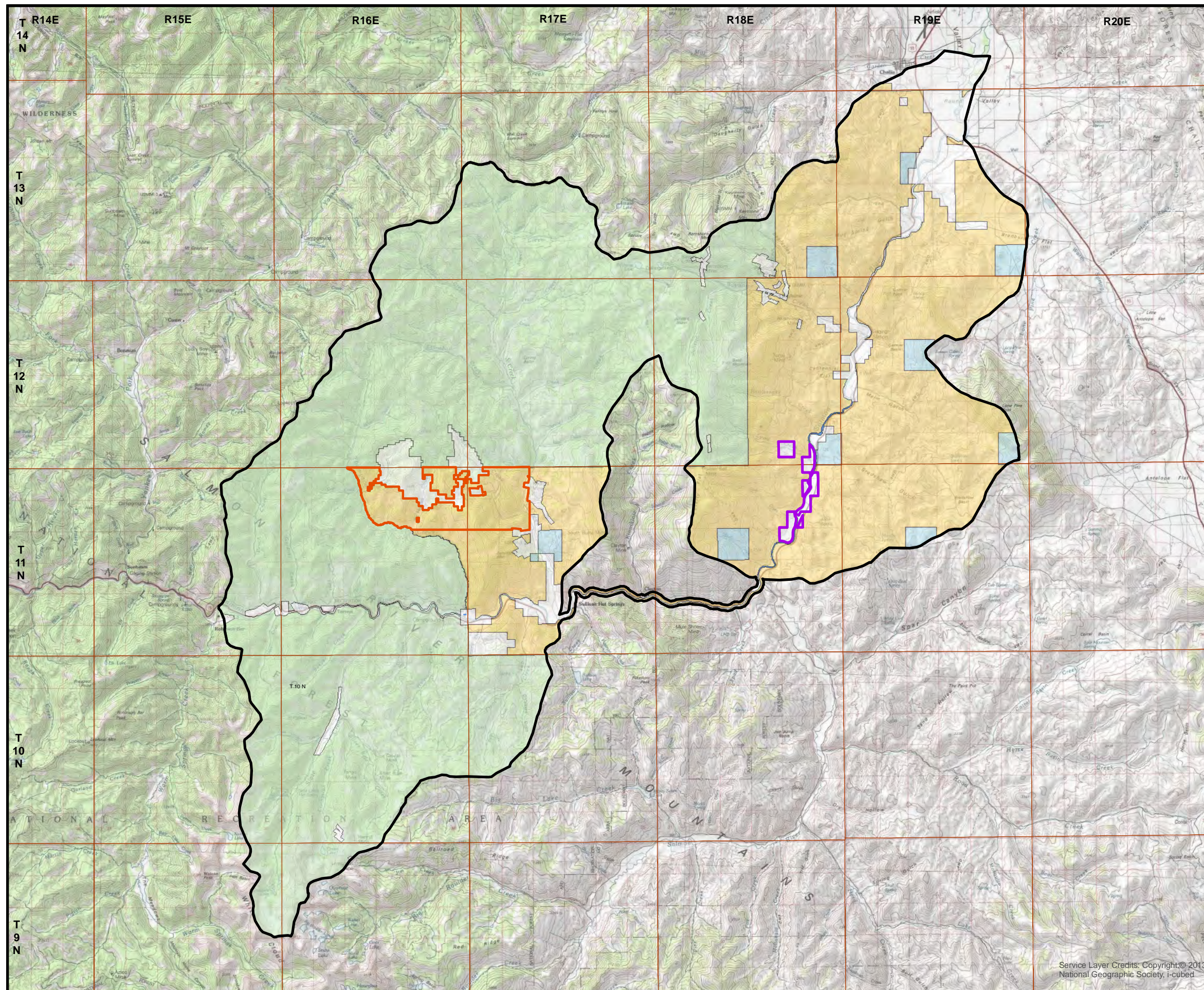


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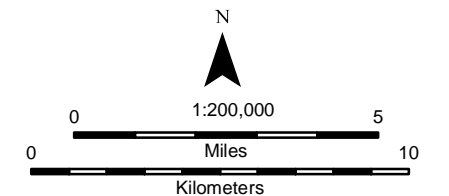
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Figure 5.5-1
Range resources CESA
Thompson Creek Mine Expansion EIS



Legend

- Selected land
- Offered land - Broken Wing Ranch
- CESA
- Land Ownership within CESA**
- BLM
- Private
- State
- Forest Service



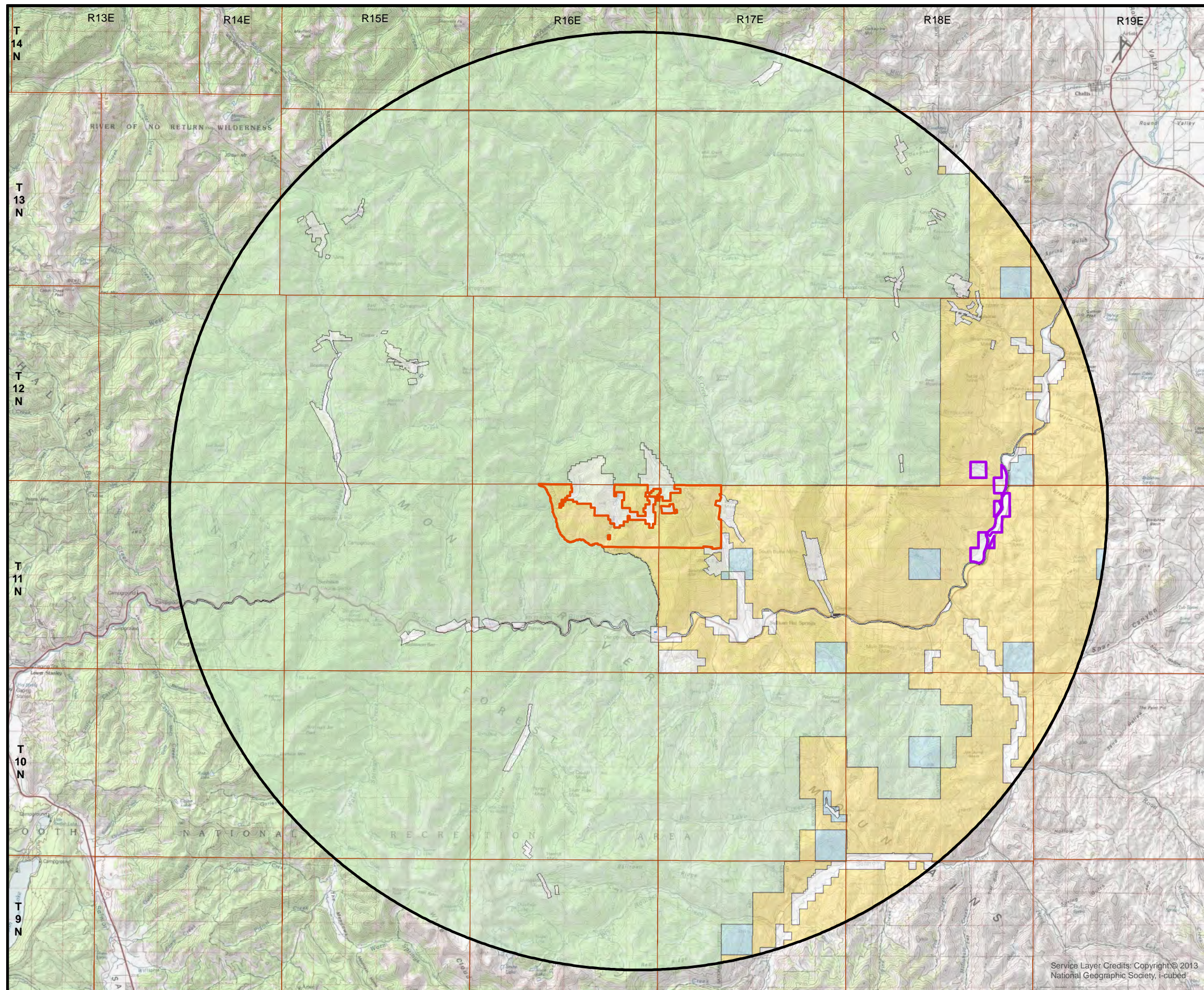
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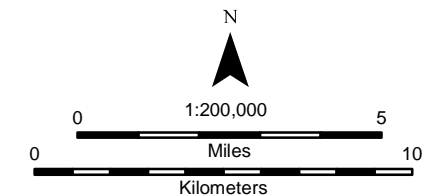
Figure 5.6-1
Fish and aquatic, water resources CESA
Thompson Creek Mine EIS

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Legend

- Selected land
 - Offered land - Broken Wing Ranch
 - CESA
- Land Ownership within CESA**
- BLM
 - Private
 - State
 - Forest Service



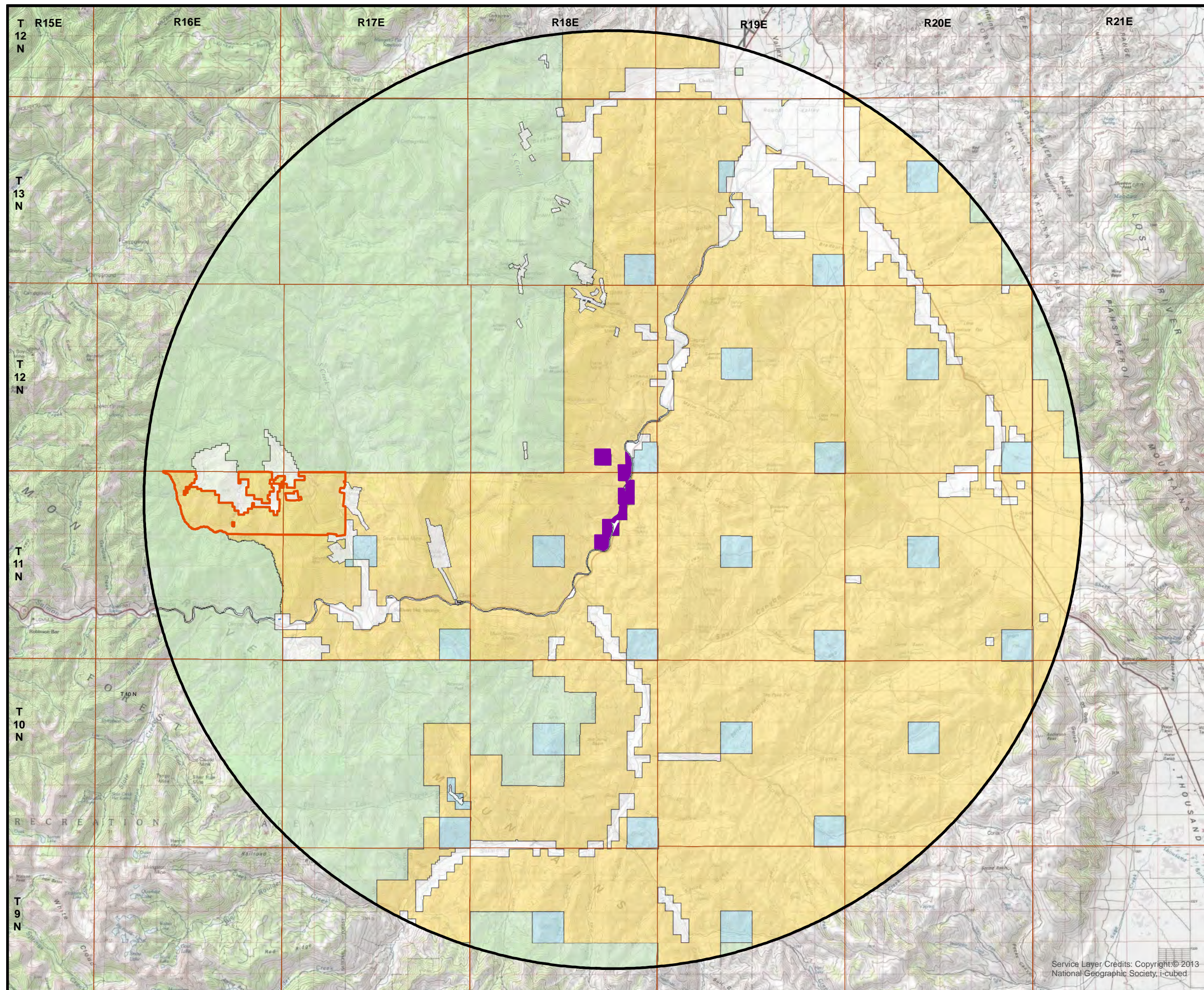
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Figure 5.7-1
Wildlife and transportation CESA,
selected land
Thompson Creek Mine EIS



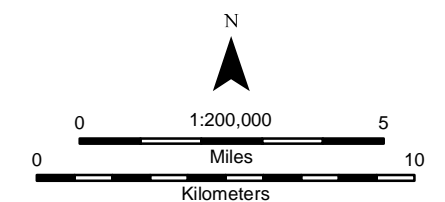
Legend

- Selected land
- Offered land - Broken Wing Ranch
- CESA
- Land Ownership within CESA**
- BLM
- Private
- State
- Forest Service

Selected land from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management,
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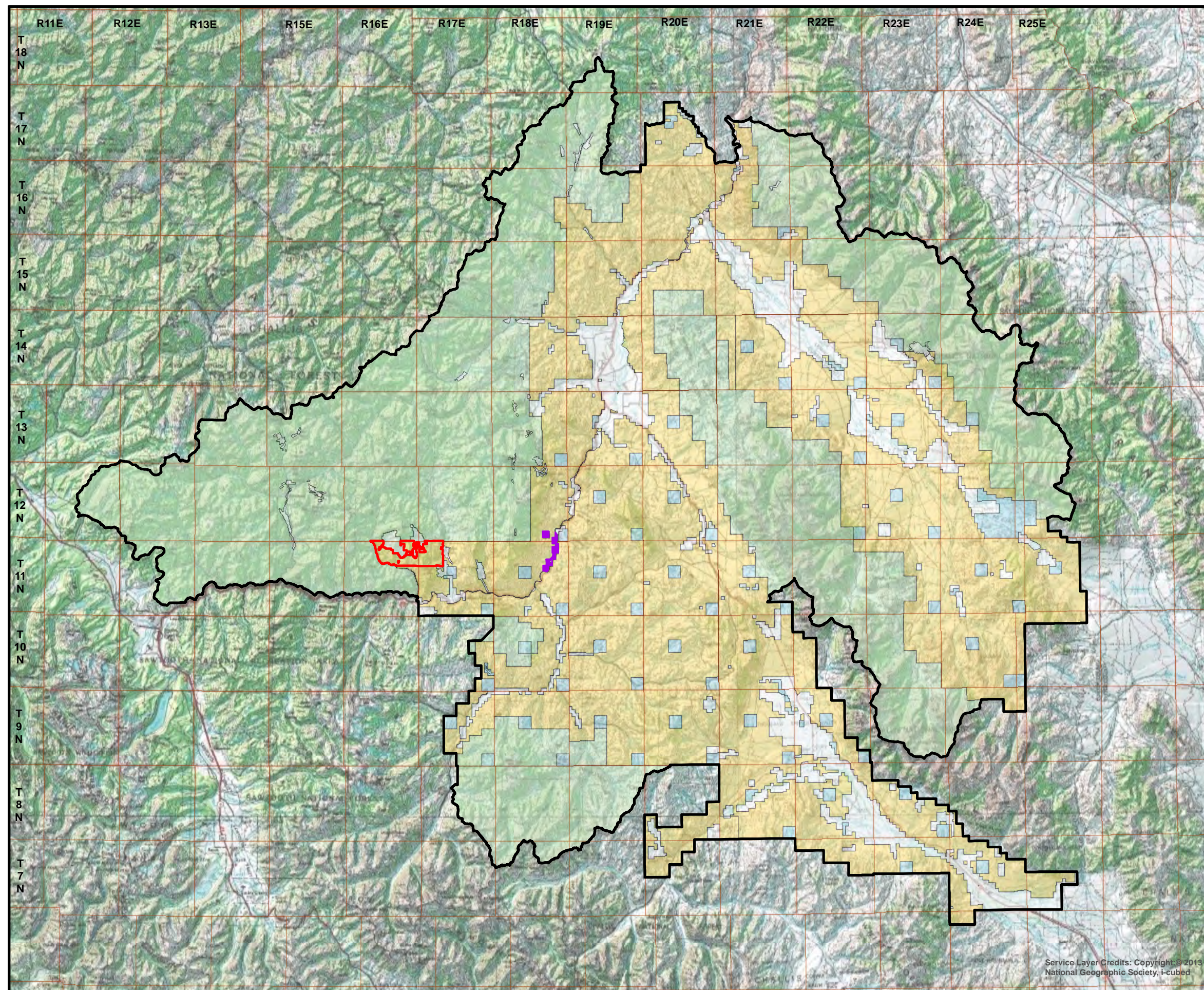


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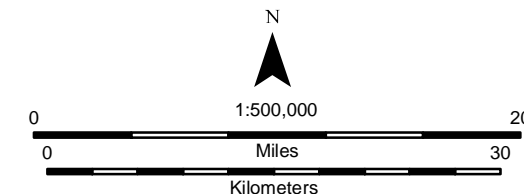
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Figure 5.7-2
Wildlife CESA, Broken Wing Ranch
Thompson Creek Mine EIS



Legend

- Selected land
- Offered land - Broken Wing Ranch
- CESA
- Land Ownership within CESA
 - BLM
 - Private
 - State
 - Forest Service



Selected land from Thompson Creek Mine data, polygons created by Ken Gardner.
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Map created September 17, 2012
By C. Pixton



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Figure 5.8-1
Special status fish species CESA
Thompson Creek Mine EIS